NAVAL FIGHTERS NUMBER THIRTY-ONE

GRUMMAN

XF5F-1 & XP-50 SKYROCKET

BY DAVID LUCABAUGH
AND BOB MARTIN

AIRCRAFT SPECIFICATIONS

XF5F-1 BuNo 1442

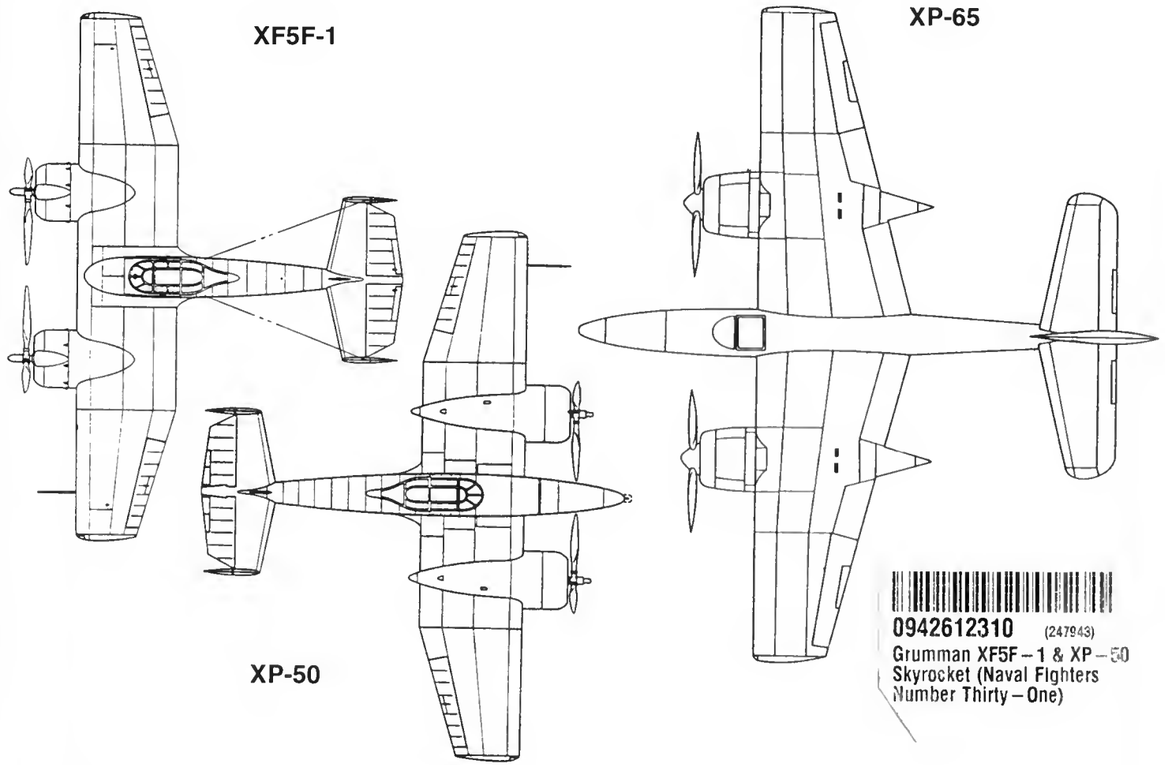
Span 42 feet.
Span wings folded 21 feet 2 inches.
Length 28 feet 8.5 inches.
Height 11 feet 4 inches.
Wing area 303.5 square feet.
Empty weight 8,107 pounds.
Loaded weight 10,138 pounds.
Max weight 10,892 pounds.
Wing loading 33.4 pounds per square foot.
Power loading 4.2 pounds per horse power.
Max speed 383 miles per hour at sea level.
Landing speed 72 miles per hour.
Rate of climb 4,000 feet per minute.
Service ceiling 33,000 feet.
Absolute ceiling 34,200 feet.
Normal range 780 miles.
Max range 1,170 miles.
Armament two 30 cal machine guns and two 50 cal machine guns.
Engines two 1,200 horse power Wright Cyclone XR-1820-40/42.
Fuel 178 gallons.

XP-50 serial No. 40-3057

Span 42 feet.
Length 31 feet 11 inches.
Height 12 feet.
Wing area 304 square feet.
Empty weight 8,307 pounds.
Loaded weight 10,558 pounds.
Max weight 13,060 pounds.
Wing loading 34.7 pounds per square foot.
Power loading 4.4 pounds per horse power.
Max speed 427 miles per hour at 25,000 feet.
Cruising speed 317 miles per hour.
Service ceiling 40,000 feet.
Rate of climb 4,000 feet per minute.
Normal range 585 miles.
Max range 1,250 miles.
Armament two 20mm cannons and two 50 cal machine guns.
Engines two 1,200 horse power Wright Cyclone R-1820-67/69 turbo-supercharged engines.
Fuel 217 gallons.

XP-65 / XF7F-1

Span 52 feet 6 inches (XF7F-1 51ft 6in).
Length 46 feet 5 inches (XF7F-1 45ft 6.5in).
Height 15 feet 2 inches (XF7F-1 13ft 9in).
Wing area 463 square feet (XF7F-1 455 sq ft).
Empty weight 15,943 pounds (XF7F-1 15,274lb).
Loaded weight 21,425 pounds (XF7F-1 20,107lb).
Wing loading 46.3 pounds per square feet.
Power loading 6.3 pounds per horse power.
Max speed 427 miles per hour at 25,000 feet (XF7F-1 429mph).
Cruising speed 180 miles per hour.
Landing speed 88 miles per hour (86mph).
Service ceiling 42,000 feet (XF7F-1 42,200ft).
Rate of climb XF7F-1 4,200 feet per minute.
Normal range 825 miles (1,160mi).
Armament four 20mm cannons and four 50 cal machine guns.
Engines two 1,700 horse power Wright R-2600-10 turbo-supercharged engines.
Engines (XF7F-1) two 2,100 horse power Pratt & Whitney R-2800-22W water injected engines.
Fuel 420 gallons.



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Grumman XF5F-1 & XP-50
Skyrocket (Naval Fighters
Number Thirty-One)

GRUMMAN XF5F-1 SKYROCKET

Above, a model of the initial SP-1 design, proposed to meet a BuAer specification for the Navy's first twin-engined interceptor. (MFR)

INTRODUCTION

The Skyrocket story was originally published in the American Aviation Historical Society (AAHS) Journal in 1989. More recently the story appeared as a two-part installment in the June and July 1994 issues of Aeroplane Monthly. The story was written by David Lucabaugh and Bob Martin with data and photos provided by Grumman's "Schoney" Schonenberg, Roger Seybel and Lois Lovisolo. They were further materially helped by CAPT W. E. Scarborough USN (Ret.) who provided additional data and loan of additional Grumman photos. The project was further aided logistically by Wayne Morris, who did most of the photo reproductions. What is most important is the fact that these individuals were able to save these documents and photos, as a project such as this would be impossible today with the demise of Grumman and the current unavailability of its history center files. The fear is that such historical data will be lost or destroyed, as was the case at North American.

Anyone having photos or other information on this, or any other naval or marine aircraft, may submit them for possible inclusion in future issues. Any material submitted will become the property of NAVAL FIGHTERS unless prior arrangement is made. Individuals are responsible for security clearance of any material before submission.

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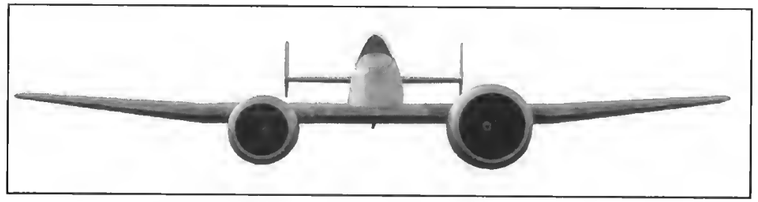
BACKGROUND

All of the comic book reading public during the 1940s followed the adventures of "Blackhawk" and his mighty men as they conquered the world of evil. Those of us with a mind-bent towards things aeronautical knew that it was not "Superman" or "Batman" who held the keys to a crime-free society, bring on "Blackhawk". Dressed in daring dark uniforms, the dashing figures of this 1940's version of the "A Team" were mounted on the very latest of aircraft. Through the paint brush the artist portrayed an entire squadron of snub-nosed twin-engined fighters, which those of us old enough to remember know that only a single actual aircraft existed for the artist to illustrate, the Grumman XF5F-1 Skyrocket.

Born in the waning days of the US economic depression, the XF5F-1 would be developed through three distinct versions with long-nose and short. The twin-engine twin-tail prototype was overbuilt so as to house ever increasing powerplants which were never utilized. Though initially



Five views of the full-size wood and metal windtunnel model of the 1938 XF5F-1 proposal. The humped fuselage would be eliminated and the small vertical tail fin area would be increased. Two different size engine nacelles were tested. The larger nacelle was for the Wright Cyclone and the smaller was for the Twin Wasp.

designed with a small wing area, this was to escalate to 303.5 sq ft with a span of 42 feet. Length of the final version was to become 28' 8.5" with a height of 11' 4". A version was developed for the Army Air Corps as the XP-50, and lessons learned would be utilized in the superlative F7F Tigercat.

The man responsible for this innovative aircraft was Leroy Grumman, president of the Grumman Aircraft Engineering Corp. A former First World War naval aviator, Grumman introduced a series of innovative fighters, beginning with the FF-1 and culminating in the F2F in 1935. Although Grumman was happy for the business, he was not happy with the limited progress of naval aircraft technology as compared to the first BF-109 and even the American Curtiss P-36.

Leroy Grumman and his staff were not alone in observing international trends in the aeronautical arena. BuAer also noticed the performance disparity of land-based aircraft as opposed to carrier aircraft. Thus it was that in September 1935 naval planners let it be known that they would welcome the submission from Grumman and other manufacturers of a design contest for an advanced aircraft to meet BuAer Proposal No. SD-24D.

Specifically, BuAer sought a new means of defending American airspace. Naval strategists saw that, in the 12 min. it would take for a Grumman F2F to reach 20,000 ft, enemy long-range bombers could do great damage to capital vessels at anchor in bases such as Pearl Harbor, Honolulu. Climb rate was a key factor if these attackers were to have armament sufficient to defeat their purpose. Although the airplane did not need to have long range, it had to be able to operate from a carrier, and folding wings, a suitably strengthened airframe and arresting gear were therefore required, plus adequate visibility for its pilot.

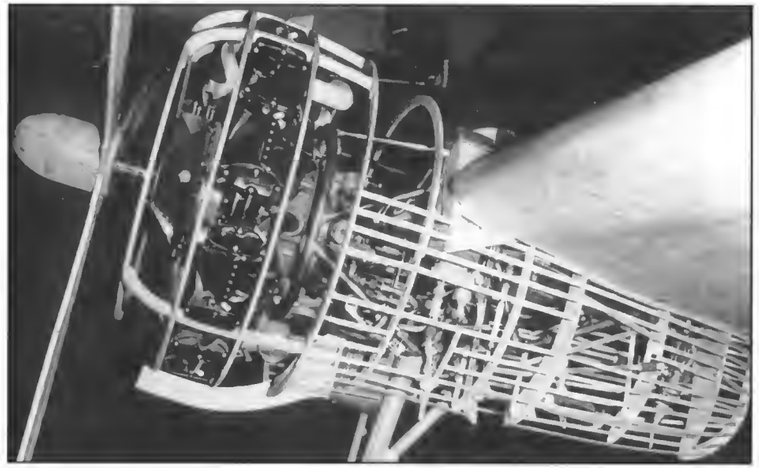
A February 1937 BuAer internal document states, "reviewing the carrier situation, the most backward development is that of the VF (naval fighter). It is generally conceded that the new engines of horsepower higher than the 1830 (Pratt & Whitney Twin-Wasp) will not give any great increase in speed over the XF4F. This means ..... it will be necessary to go into a two-engine, single-seat fighter design."

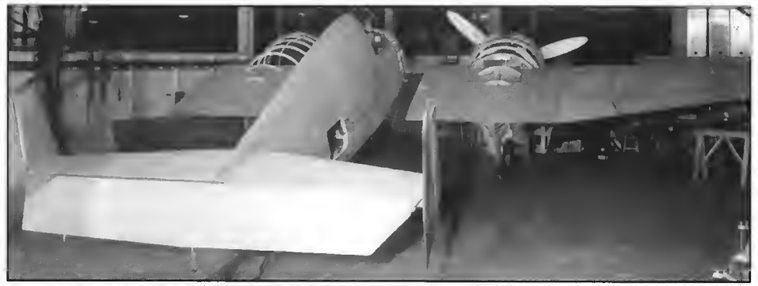
In January 1938 BuAer sought a response to Specification SD112-13, which called for several manufacturers to present bids for a single-engined naval interceptor. Grumman responded with an advanced version of its Wildcat, designated XF4F-2 and powered by an R-2600 engine. This proposal was rejected, and in May the naval planners approved the development of Vought's "B" Design, which would materialize as the F4U Corsair series (viewed by BuAer engineering staff as an outstanding design concept) and Bell's modified P-39, which became the XFL-1 Airabonita.

Meanwhile, BuAer Specification SD112-14 also was issued, soliciting bids for the twin-engined VF from 13 companies including Brewster, Grumman, Seversky and Lockheed. The specification outlined armament, range, speed, and other critical design and performance characteristics.

Grumman focused its attention on a design which would become the model G-34, or XF5F-1. The company responded to BuAer with its bid in April 1938 with an aircraft featuring the concentration of armament in the nose, twin-engined safety, better pilot visibility and improved performance.

At right, the original full-scale wood mockup of the XF5F-1. Top, the engine nacelle complete with Wright Cyclone engine accessories and engine mount. Middle, two views of the complete mockup showing the small vertical fins, which were proven by wind tunnel tests to be too small. The humped rear fuselage was eliminated to improve visibility on the flying prototype. At right, view from the cockpit showing the upper engine nacelle and location of main fuel tank in the wing.



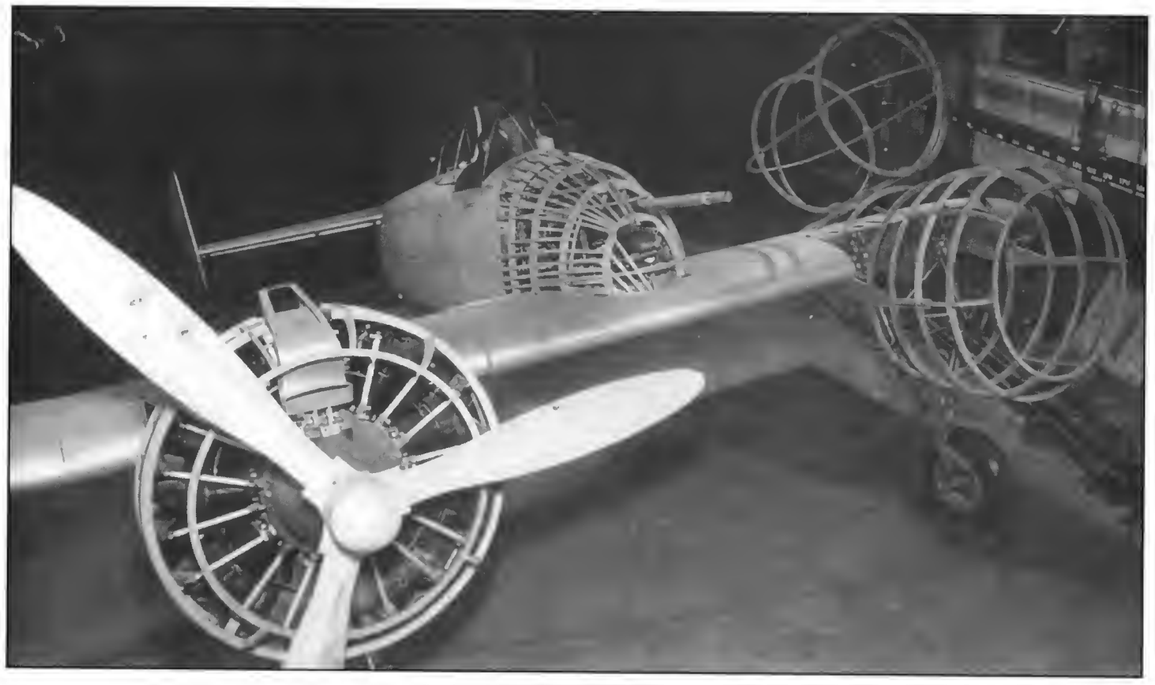


It was estimated that the single prototype, delivered to NAS Anacostia, and including all testing, would cost the Navy $261,000. Wingspan was projected at 38' 8", length 27' and height 9' 9". Estimated weight was to be 7,000 pounds empty. Top speed was anticipated to be 335 mph with a power-on stall speed of 67.6 mph. Estimated service ceiling was 36,000' with a range of 1,015 miles. The single prototype later would evolve to a 42' span with a wing area of 303.5', a length of 28' 8.5" and a height of 11' 4".

The design engineer for the XF5F was Dick Hutton, who stated in the 1980s that, "two-engine safety was always a desirable goal, but resulted

Above, the reworked mockup on 22 January 1940 with the cut down rear fuselage which improved visibility.

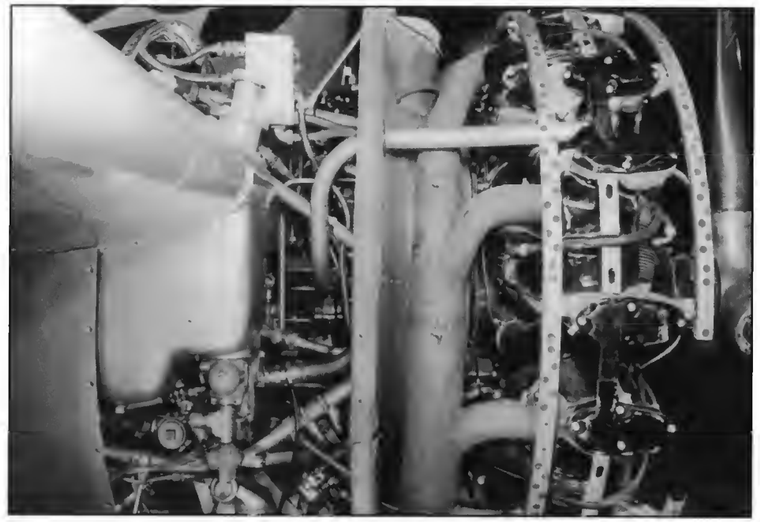
Below, the reworked mockup which illustrates the engine installation and proposed armament. The cylindrical shape above the port engine was the mockup for the emergency flotation bag initially required by the design.



At right, the Wright Cyclone engine as installed on the XF5F-1.

in a larger aircraft, spanwise, for parking on the carrier. By eliminating the width of the fuselage, the engines could be located close together. By locating the guns on the centerline, the boresight problem could be eliminated. Landing visibility from the cockpit could be improved. Good space coverage of the wing by the slipstream would improve the take-off. Engines close together, along with the twin vertical tails in the slipstream, made single-engine operation easier. Location of the guns on the centerline and close to the center of gravity permitted various gun combinations to be accommodated, including 30 cal, 50 cal and 37 mm cannon. Engines used were about the lowest power-to-weight ratio, and by having two, total power would give good performance."

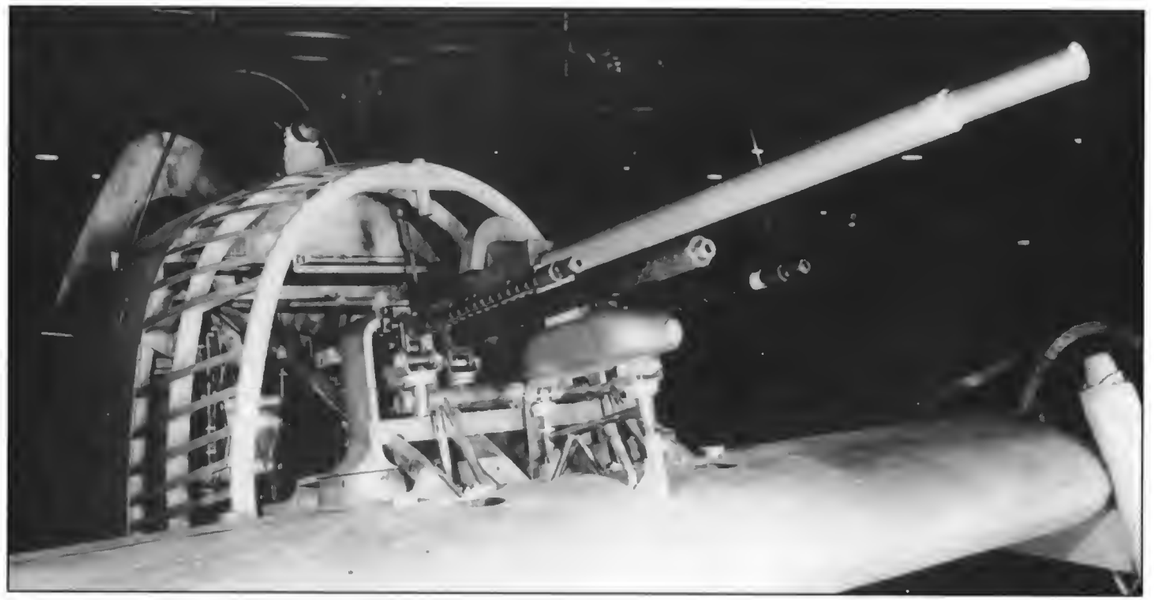
Pratt & Whitney's recent entry into the aircraft engine industry had resulted in the R-1535 radial Wasp series, with which Grumman had good experience in their F2F and F3F fighters. So the contest lay with the P & W Wasp engine or Wright's well-known Cyclone radial engine. a June 1938 memo from Grumman to BuAer



offered comparisons between the P & W R-1535 of 1,298 pounds and the Wright R-1820-28 of 1,290 pounds, as well as the R-1820-G231 of 1,300 pounds. The Wrights were geared single-row engines and, although of greater frontal area than the P & W unit, offered better upkeep and maintenance and simplified installation. The larger single-row installation somewhat interfered with the pilot's view in some quarters, but the engine did not project as far forward as the twin-row unit and thus permitted better over-the-nose visibility.

Because of its greater power (1,200 hp at 2,500 rpm compared with the R-1535 Twin Wasp's 825 hp at 2,630 rpm), the Cyclone required a larger propeller which was 138 pounds heavier. Later, memos to Naval inspectors called attention to a

Below, the mockup's nose with two 30 cal and one 50 cal machine gun installed and with a wooden mockup of what is believed to be a Madson cannon from Denmark

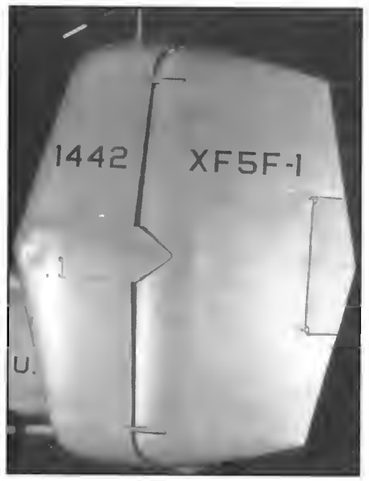


Above, the XF5F-1 on roll-out day. Note the original gear door configuration as seen in close-up on page seven. The propeller blades were silver like the aircraft, save the upper wing which was chrome yellow. The tips of the props were red-yellow-blue.

delay in mockup assembly because of a naval imposed requirement that Grumman provide alternative nacelles suitable for Wright or Pratt & Whitney engines.

Finally, in October 1938 the Navy chose the Wright Cyclone. A member of BuAer's engineering department commented, "Although I believe that the installation of the R-1820-G231 engines (Cyclones) for the smaller two-stage (supercharged) P&W 1535 engines (Twin Wasp)... renders the design less attractive, we are practically compelled to take the 1820s if we are to get the airplane anywhere near the date desired... at an estimated cost of about $10,000 for each engine." Naval officials expressed a preference for the Twin Wasp, but realized that its selection would mean an approximate 18-month delay in delivery, a cost increase of $8,000--9,000, and less reliability, as it was a newer engine. Thus the Cyclone was specified.

Below, the final rudder had a relatively straight hinge line. The triangular piece of metal at the center of the rudder hinge was the final addition.



The report continues, "Germany, Great Britain, France and even the Air Corps have the jump on us in twin-engine fighters... carrier operations being what they are, we are, however, faced with a question, as yet unsettled, as to the practicability of twin-engine operation aboard a carrier as well as the question of the suitability of the airplane itself as a fighter. Feeling that in the present state of the art we will be inevitably driven to twin engines in order to maintain our superiority, it is with dismay that I see the problem being complicated at the very start by a restriction in engine choice. At present we have Grumman across a barrel --- he cannot go ahead with structural design on either engine without our approval." The Navy had already approved a Cyclone-engined model as marginally meeting pilot vision requirements, saying, "that so far as vision is concerned the airplane would be satisfactory for landings on land or on a carrier."

Center-of-gravity issues were of nagging consideration to Grumman and his staff. A January 1939 memo from Leroy Grumman to INA (Inspector of Naval Aircraft) requested the movement of the engines forward to permit possible later installations of two-stage engines. This modification resulted in replacing the Hamilton Standard propellers with hollow-steel Curtiss electric propellers weighing 79 pounds less.

Throughout 1938 Grumman struggled with their design. Initially, a single-tail design was proposed with a rather ordinary fuselage and wing design. However, subsequent to Grumman's proposals, on 24 June 1938, the NACA (National Advisory Committee for Aeronautics) acknowledged receipt of their drawing SP-1 illustrating Grummans twin-engined proposal for a reduced-scale wind tunnel model. Though initially featuring a long nose and single tail, by September 1938 testing resulted in greatly modifying the nose by reducing its length to a point ending at the forward wing spar and introducing a twin fin and rudder system. Grumman also determined through their wind tunnel testing,..."that the flow over the upper surface on the wing between the fuselage and the nacelle (was)... critical. This condition was encountered in the original tests and corrected by locating the nose of the fuselage aft of the leading edge of the wing. Flight tests on the original XF5F-1 with this arrangement were reported to show good stalling characteristics and low landing speeds. Extending the fuselage forward of the wing has given a premature stall with much higher landing speed." Thus was born the unique fuselage of the initial prototype of the XF5F-1.

Later wind tunnel testing of the small model included introduction of fillets aft of the wing and extending the flatsided portion of the fuselage forward of the wing leading edge. Further testing of this modified nose section was done at the New York University wind tunnel on 17 October 1940. Findings from these tests verified earlier testing by Grumman wherein a mysterious air-flow pattern at high angles of attack created severe turbulence causing premature stalls.

Earlier, on 8 July 1938 BuAer provided Grumman with Contract No. 61582 for development of Grummans proposal and assigned BuAer No. 1442 to the yet-to-be-built actual aircraft. By October 1938, a wooden, full-scale model was completed. Though basically constructed of wood, the fullscale model was comprised of bare metal sheets of aluminum alloy screwed on to the wood and steel frame. Since BuAer could not with assurance state the availability of the Pratt & Whitney R-1535 Twin-Wasp, Grumman was asked to design two engine nacelles for the mockup: one for the right nacelle to house the Twin-Wasp and a second one for the more easily available Wright Cyclone engine. Since the Cyclone was a single-row radial, the frontal area of its nacelle somewhat obstructed pilot vision compared with the proposed Twin-Wasp installation.

Above and below, two views of the original landing gear door configuration, which had no rear cover for the tire. Gear door cut-out closed around the air scoop.

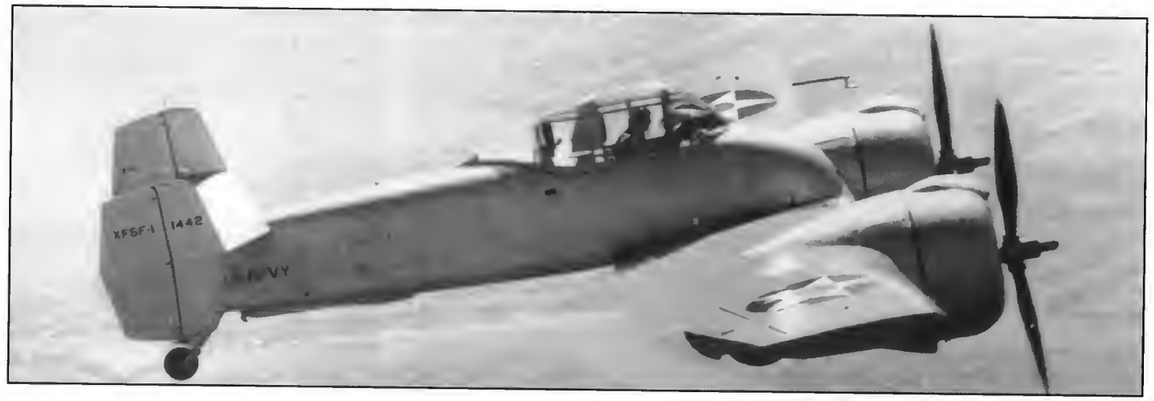
Above, the XF5F-1 in the spring of 1940, showing the original exhaust system identified by the fairing on the side of the nacelle.

On 22 October 1938, the completed model was shipped to NACA for wind tunnel testing in their Hampton Roads, Virgina, facility. Testing there revealed a number of problems concerning turbulence around the engine nacelles and fuselage nose. It was learned that the raising of the engine nacelles 7.5 inches in relation to the chord line of the wing would likely raise the aircraft's speed by about 7 mph. However, the interference in pilot vision such a modification would create cbviated this change. Stability problems led to an increase in horizontal as well as vertical tail surfaces.

By March 1939, Grumman had received final test results from the NACA testing. Following this testing, on 27 May 1939, CAPT J. H. Towers, acting chief of BuAer, directed the commanding officer of NAS Norfolk to employ a special preservative to safely store the wooden mockup ..."it is requested that the model be stored for a probable period of one year." But it was not until December 1941 that the NACA responded to a BuAer request and dismantled and surveyed the wooden model.

In late 1938, Grumman at Navy request also introduced into drawings antiaircraft bomb containers. Each wing was meant to house containers

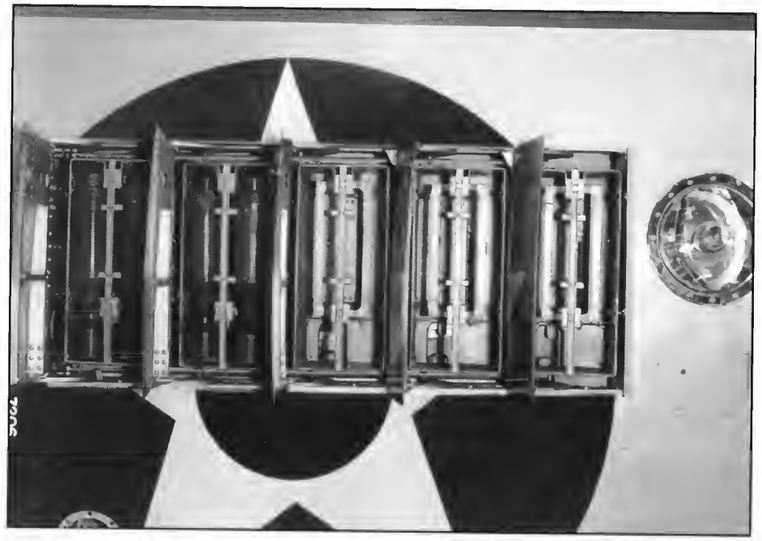
Below, the XF5F-1 in flight from above showing the yellow upper wing and lack of wing fillets on this first flight configuration.



Above, early test flight of the XF5F-1 in its first configuration.

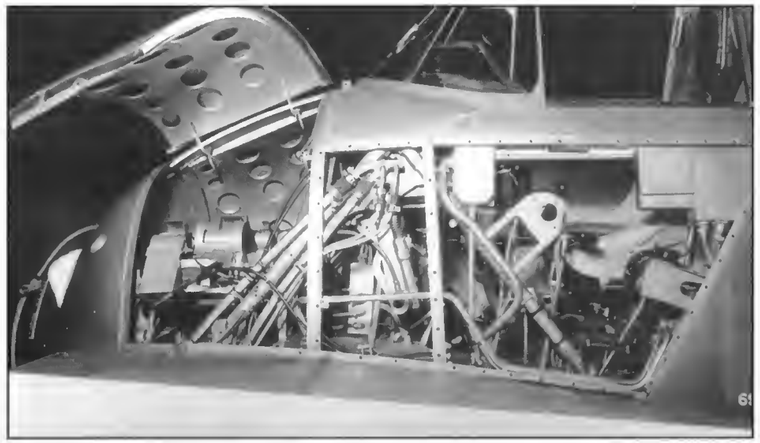
for 20 bombs. Later this demand was eased to five containers in each wing, holding two 5.2 lb bombs per container, with retracting doors. The concept invisioned by naval planners was that this interceptor, having achieved a cruising altitude over long-range enemy bombers, should attack and release the bombs upon the enemy aircraft but that ... "in no case will the Bureau be willing to accept a design which provides for releasing less than four bombs simultaneously..."

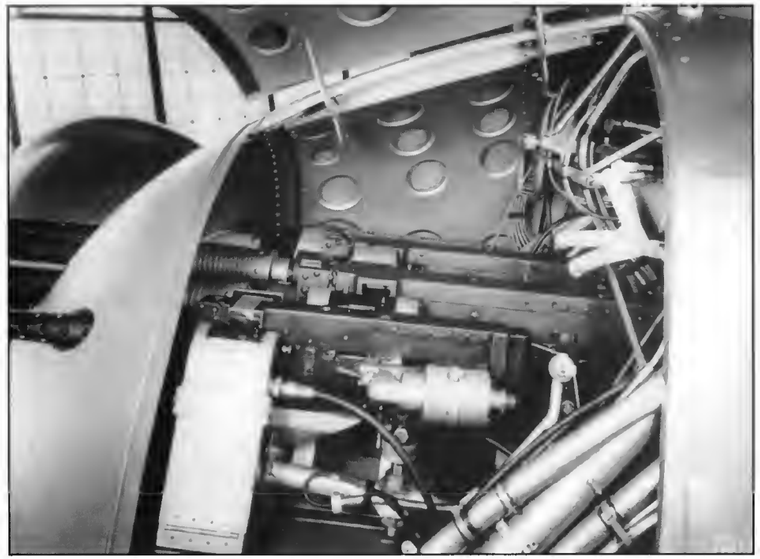
On 23 February 1939, a team of US Naval officers inspected the first full-scale mockup, which by now featured twin tails and manually folding wings. During the inspection, Grumman was asked to explore what electrically folding wings would cost.



Above, lower left wing showing the five open antiaircraft bomb housings with 5.2 lb bombs in two of the containers.

Below, the XF5F-1 in level flight which was slightly nose-up.

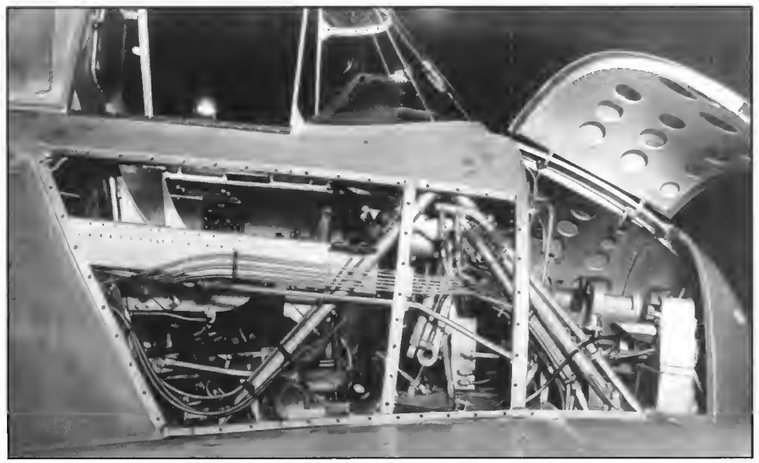




Above, nose of the XF5F-1 with the proposed two 50 cal and two 30 cal machine guns installed after the 23 mm Madsen cannon proposal was dropped.

The observers were impressed by several features, in particular the armament system. "The four guns ... are located forward of the pilot, close " centerline ... This is by far the finest gun installation ever offered in a Naval fighter airplane. Engine controls have been skillfully paired so

At left top, the left hand armament door is open sans guns and the cockpit side panel removed. At left middle, the armament compartment with guns installed. At left bottom, right hand view of exposed cockpit. Below, belly ammunition bays open. Note shell ejector chutes.



that operation of the engines appears greatly facilitated, ... and instrument installation surprisingly simple. Vision to the rear is poor because of a solid overturn structure."

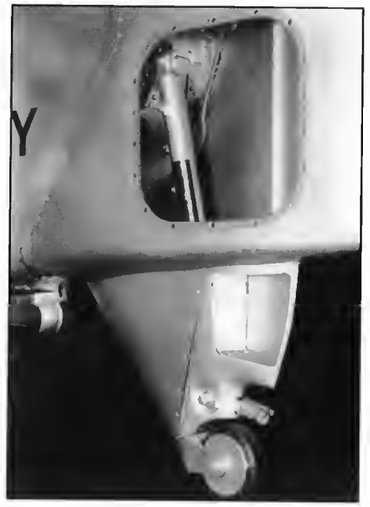
After viewing the fuselage mock-up, observers suggested that Grumman should ..."pull in nose lines of fuselage forward of cockpit ... to improve vision." Naval inspectors predicted high drag with short engine nacelles, and the use of spinners on the propeller hubs.

In February 1939, the Navy anticipated that the armament would consist of two 50 cal and two 30 cal machine guns, with provision for the installation of two cannon, although it was thought ..."highly improbable that 23mm Madsen cannon will be made available for installation in the XF5F." In March, Grumman responded that, "without at least a single example of the intended cannon and belt links, it would be very difficult to prepare suitable housing of the armament and the surrounding structure."

Later that month, the company was officially advised by BuAer that the 23mm Madsen cannon would not be available, and BuAer deleted this installation from the specification. Presumably, the liklihood of the Madsen company's home country, Denmark, becoming a war zone was foremost in the minds of BuAer staff.

With the prototype now under construction, Grumman had installed an additional 750 pounds of equipment above that called for in the original specification. This included improved engine mounts for later, higher-powered engines, radio equipment, and a reduced but strengthened rear fuselage decking with a 360˚ canopy to improve vision. The wing area was to be increased by 16 feet to carry this increased weight by extending the span to 42 feet, thereby improving the range and reducing minimum speed to 69 mph.

BuAer was highly critical of Grumman's apparent failure to meet the original specified weight. Indeed, at the submission of its bid in May

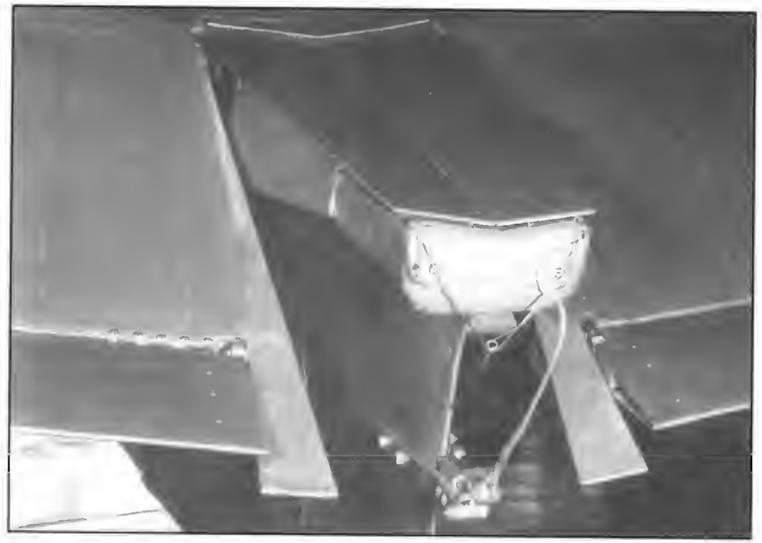


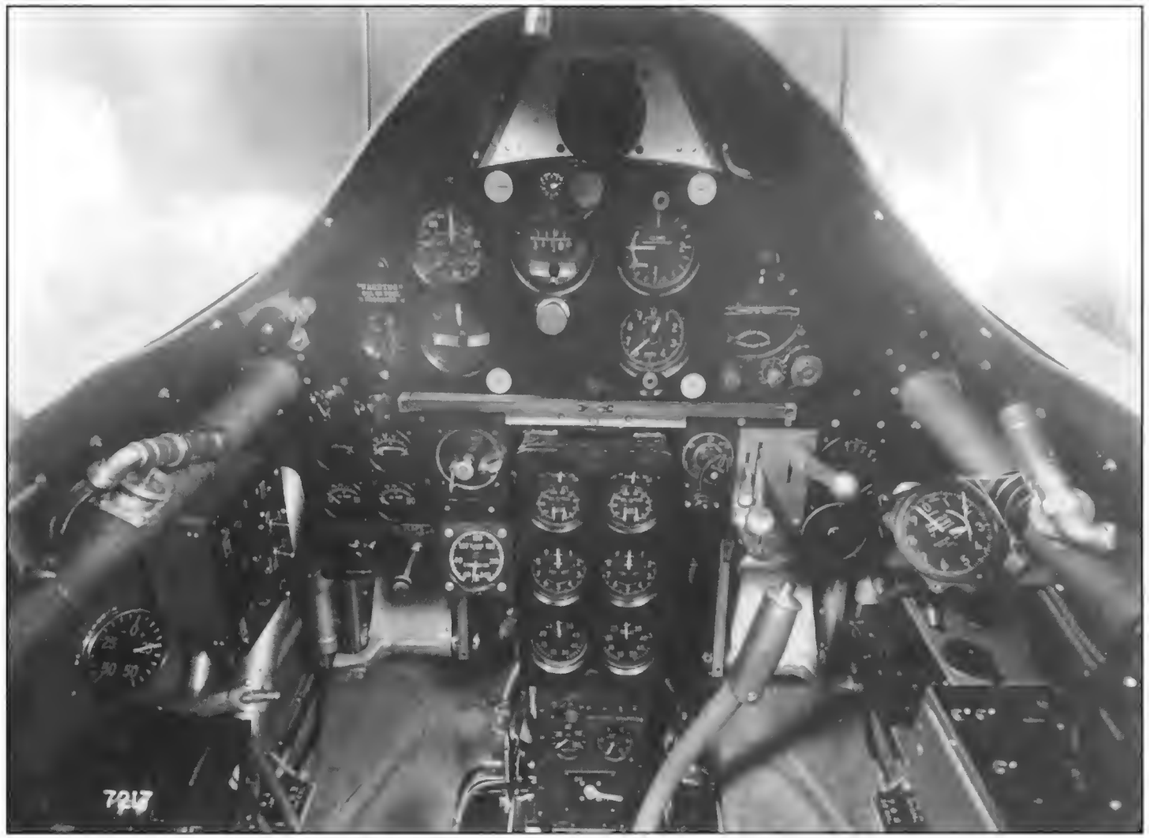
Above, two views of the tail wheel assembly,

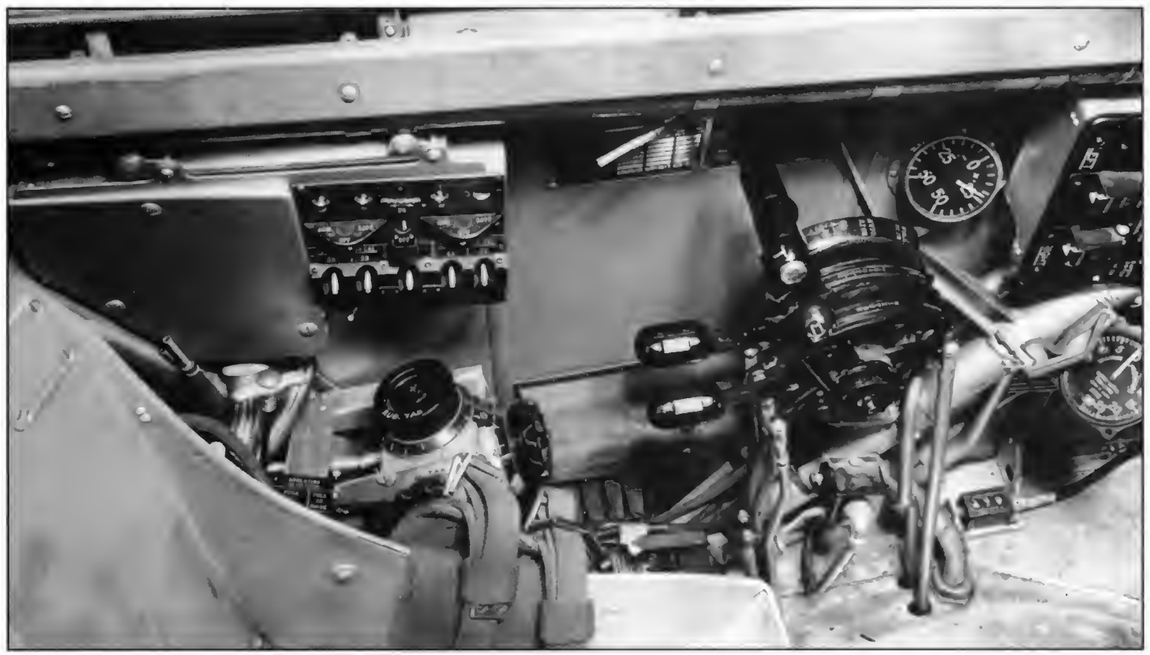
1937, the manufacturer had agreed to pay a fine for each increment of weight above the design weight allowed by BuAer. A March 1940 memo from Grumman to INA stated company recognition of overweight problems of the prototype. Grumman rationalized the weight increase through Navy-requested engine change, increased tail area, landing gear improvements, etc., resulting in over 700 pounds above the weight guaranteed by the company.

The memo concluded, "as a result of changes incorporated in the design throughout the twenty months spent in its development, the XF5F-1 airplane, as delivered, will be a more advanced type, and a more useful airplane, than the XF5F-1 airplane contemplated in the original contract." The letter ended by accepting the increased costs at Grumman's expense, "providing the Contract Weight Guarantees are adjusted by the Bureau." Despite this plea, however, on 11 April 1940, BuAer agreed

Below, spin chute installation above the tail wheel on 27 February 1941.



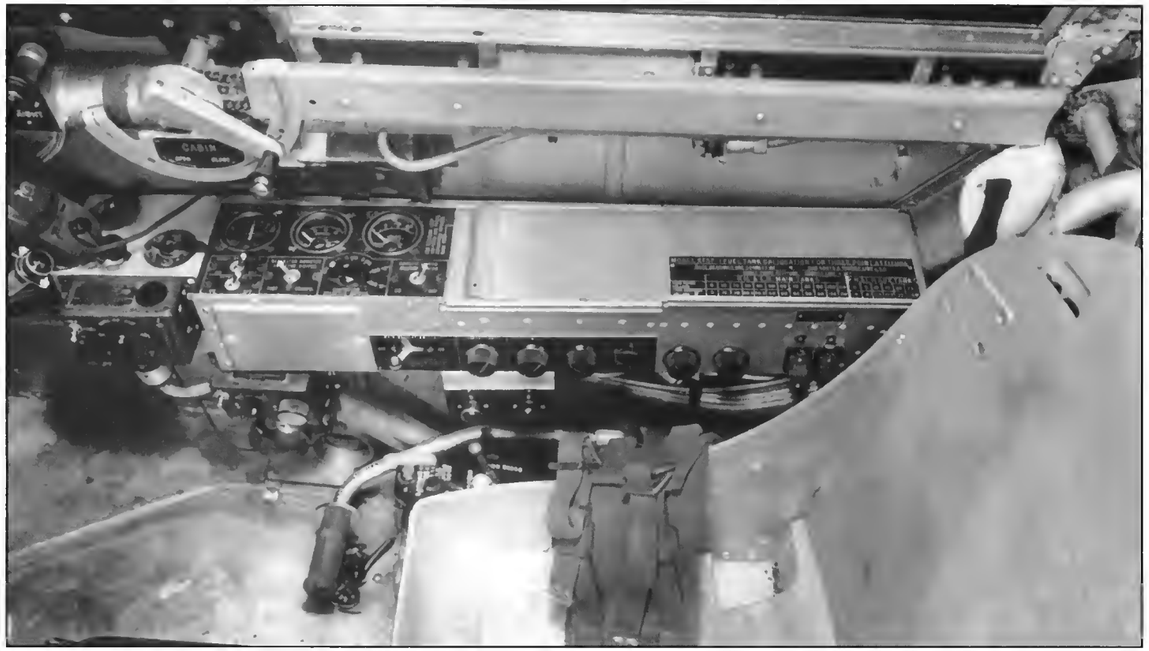




to accept only 196 pounds of the 750 pounds over specification, declaring ominously, "the contractor's attention is invited to the contract which provides that ... if the airplane exceeds 200 pounds overweight, payment ... may be at the discretion of the Secretary of the Navy."

Grumman had invested considerable innovation in the XF5F-1 design,and the employees were certain they had a world beater. Finally, in late March 1940, with Navy BuNo 1442 painted in black on each fin, the XF5F-1 was rolled-out. The entire aircraft exterior was silver lacquered over aluminum skin, except for the top surface of the wing. This was painted a bright Navy yellow, extending over the leading edge and wing tips with a cutout for the engine nacelles. This paint scheme was changed in late 1941 to a standard Navy blue and light grey scheme

At left top, initial instrument panel configuration. At right, updated instrument panel with sharply narrowed instrument cover which improved visability. At left bottom, left hand pilot's console. At right bottom, right hand pilot's console.



Above and below, three views of the XF5F-1 after new gear doors were installed, and new exhaust stacks which cleaned up the lower engine nacelles.

when the aircraft was modified with an extended nose.

Although the Skyrocket first flew on 1 April 1940, with R. A. "Bud" Gillies at the controls, Bob Hall, now a retired Grumman VP, later took over the test program. In November 1940, "Connie" Converse assumed the test pilot role leading to final Naval demonstrations. Flight log book entries indicate flight tests were made more difficult because of excessively high engine temperatures. Twenty-five test flights averaging 3/4 of an hour each were flown during the 1.5 months following the initial test flight.

Following oil-cooling duct modifications, the XF5F-1 finally completed preliminary dive tests in January 1941. With "Connie" Converse at the controls, 487mph was achieved in a dive on 31 January followed by 505mph on 1 February during a zero lift dive. In late 1980, Converse recalled, "the flying qualities of the XF5F-1 were good overall. The counter-rotating props were a nice feature , virtually eliminating the torque effect on takeoff ... single-engine performance was good, rudder forces tended to be high in single engine configuration. Spin recovery was positive but elevator forces required for recovery were unusually high. All acrobatics were easily performed, and of course forward visibility was excellent." The only mishaps Converse encountered were a pitot tube which tore loose during dive tests, and an engine which cut-out for a few seconds during his first loop.

Improvements to the aircraft were pursued in several directions, some generated by Grumman and others at the urging of BuAer. BuAer requested a Grumman design study concerning an increase of fixed guns from the then installed two 30 cal and two 50 cal machine guns with 500 and 200 rounds of ammunition per gun (respectively), to that of four 50 cal machine guns with 400 rounds per gun. Also considered was a BuAer proposal for installation of a Hispano-Suiza-Birkigt cannon of unknown size to meet a Navy demand for more firepower. Even with these proposals, there is no evidence that any gun installation was ever test fired in the XF5F-1. Grumman quickly responded to the Navy request with a proposed nose extension to house the added weight and mass of the new installation, for which the Navy would be billed an added $5,530. Other changes were proposed, including a lowering of cabin height as were lengthened engine nacelles to extend beyond the wing trailing edge. Test results from New York University revealed that the lengthened nose and engine nacelles were responsible for a speed increase of 15 to 18 mph in top speed, following newly introduced fuselage and wing fillets.

Grumman complained to BuAer that some of the GFE (government-furnished equipment) supplied was faulty and had caused Grumman delay and added expense. Test pilots also found the left engine to consistently run "considerably hotter than the right during full power climbs, high-speed runs... and carrier approach flights." Flight tests also confirmed the greater efficiency of one exhaust stack for every two cylinders so as to avoid some loss of engine power through back pressure as opposed to the original single exit manifold. This modification increased top speed by about five mph. On the slow speed side of testing, it was found that the modified long-nosed prototype displayed unexpectedly sudden wing stall. This corroborated the earlier test results at New York University, which demonstrated that the extension of the fuselage forward of the wing resulted in premature stall

with a much higher landing speed.

Apparently, sometime in 1941 the XF5F-1 acquired the popular name Skyrocket. Company internal documents fail to provide the true source of this name though tradition refers to a newsman viewing the aircraft as "climbing like a skyrocket." A September 1941 Grumman letter to BuAer refers to both the XF5F and proposed F7F as the Skyrocket. Also of note is a July 1944 Grumman document referring to the F7F as Tigercat, the name selected following a company-sponsored contest, but there is no documentation to support this being the means whereby the XF5F-1 acquiredits name.

As the Skyrocket matured, it endured three basic modifications from the original rollout configuration, which featured the short nose and nacelles, no guns, canopy side window brace, exhaust system ejecting outboard of each nacelle, and a straight rudder hinge line. The first modification was to change the landing gear doors to a large forward opening door and two small side opening rear doors with cutouts for the tire. The second modification consisted of modifying the exhaust system to introduce ejector exhausts, which replaced the exterior exhausts. The third modification was the addition of the fuselage-to-wing fillets and the new balanced rudders. The final

Above, the XF5F-1 after further modification. Fuselage-to-wing fillets have been added and new rudders have been installed, replacing the straight hinged rudders used previously.

Below, the revised rudders' hinge lines are heavily contrasted in this rear view photo of the XF5F-1, with its manually folded wings folded and wing braces installed.

modification was the extension of the nose past the leading edge of the wing, lengthened engine nacelles with two side opening gear doors which covered the tires and with prop spinners, enlarged and revised rudders, and deletion of the canopy side braces.

Considerable care was displayed by Grumman test pilots to avoid damage of the single prototype. Thus, Navy officials considered carefully the risk inherent in the aircraft being made to exhibit an inverted spin demonstration, especially upon receipt of a Grumman plea in July 1940 to exclude this test for fear of loss or damage to the aircraft. Finally, however, BuAer insisted the XF5F be required to fulfill the same testing as other newly designed Naval aircraft. On 30 June 1941, LCDR John Crommelin, BuAer operations officer, addressed B. A. Gillies, VP of Grumman, on the subject. He stated understanding that Grumman could not locate a pilot willing to demonstrate an inverted spin in the XF5F. Further, "I have written a Tech Order on recovery from inverted spins. ...I have had little practical experience in monoplanes, for they are comparatively new .... However, I am vitally interested in the twin-engine fighter program and hate to see any obstacles thrown in its path .... (therefore) I will spin inverted any airplane that Mr. Grumman will build if he can get someone to spin it right side up." In the summer of 1941, LCDR Crommelin received directions from ADM John Towers, chief of BuAer, to select the five or six best available Navy pilots in the fleet to test fly in competition the Spitfire, Hurricane, P-40, P-39, XFL-1 Airabonita, XF4U, F4F, F2A, and XF5F. Following an hour's familiarization with his aircraft, each pilot would fly through a series of maneuvers, write up his aircraft's performance, and trade aircraft and go through a similar regimen with the other test planes. Crommelin stated in a 1985 letter to George Skurla, Grumman president, "for instance, I remember testing the XF5F against the XF4U on climb to the 10,000 foot level. I pulled away from the Corsair so fast I thought he was having engine trouble. The F5F was a carrier pilot's dream, as opposite rotating propellers eliminated all torque and you had no large engine up front to look around to see the LSO (landing signal officer) .... The analysis of all the data definitely favored the F5F, and the Spitfire came in a distant second. ..ADM Towers told me that securing spare parts ... and other particulars which compounded the difficulty of building the twin-engine fighter, had ruled out the Skyrocket and that the Bureau had settled on the Wildcat for mass production."

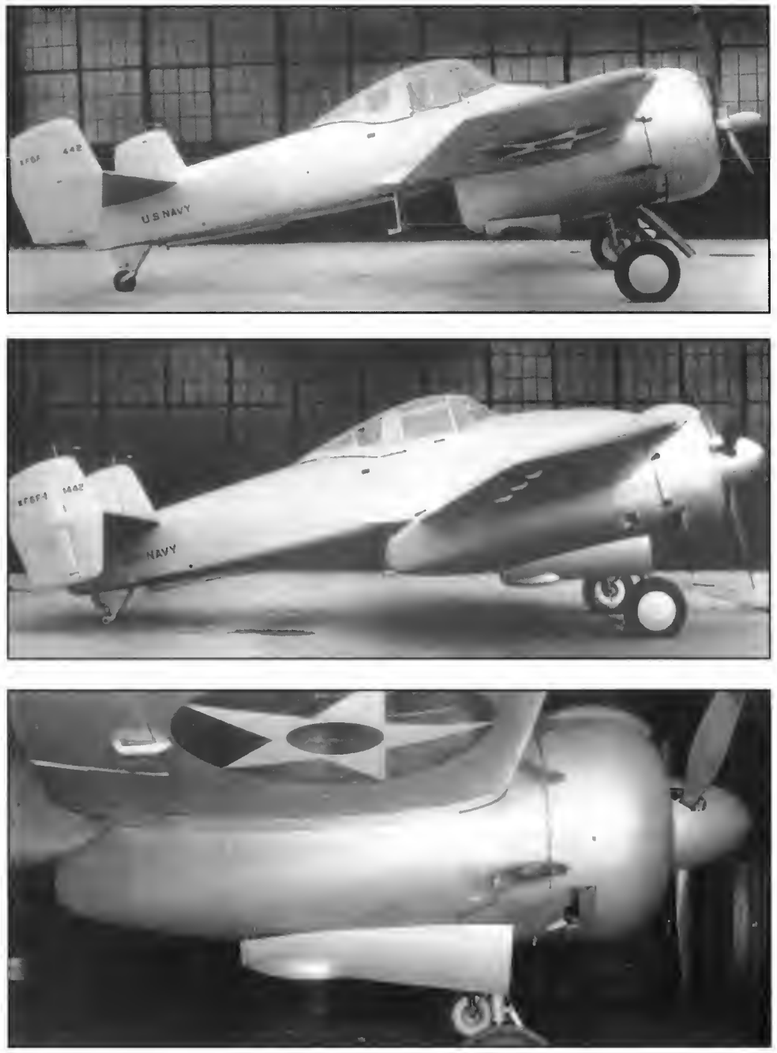
With preliminary tests completed, Leroy Grumman addressed BuAer via INA on 27 November 1940, proposing that the XF5F be tested at NAS Anacostia by service pilots at no cost to the government. This was

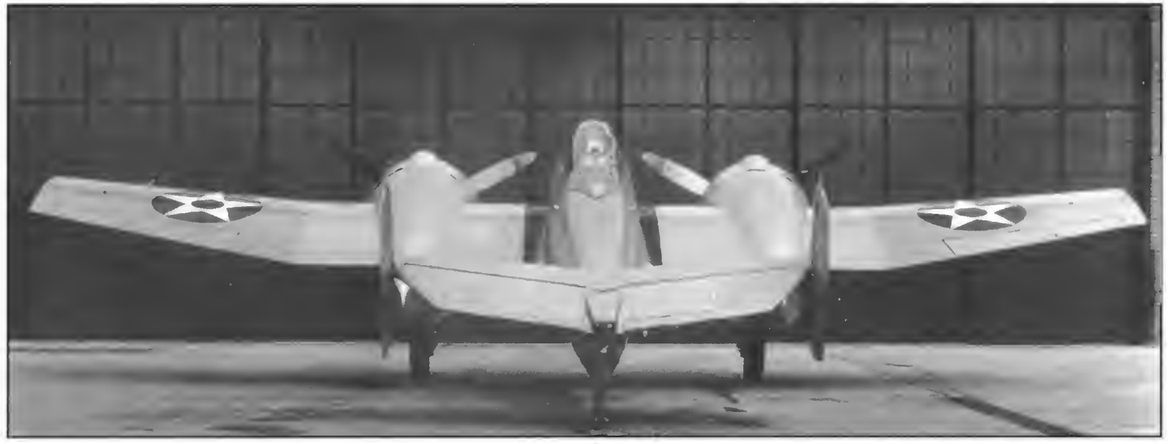
Below, overhead view the XF5F-1 in its final short nosed form prior to modification into the long-nose version. Note the fuselage-to-wing fillet.

At right, comparison of the short nose and long nose configurations. Note the extended engine nacelles on the long nose version, which actually increased the airspeed of the XF5F-1.

obviously a ploy to liberalize Navy purse strings which had thus far failed to provide Grumman with the level of production that 1940 world events seemed to portend. Following initial rejection by the Navy in June 1938, the F4F Wildcat returned in much modified form to be accepted by the Navy, France, Great Britain and even Greece, so that by November 1940 Grumman's production lines were humming. Company engineers could see that there were to be no production orders coming from the prototype XF5F and thought to pass along to the Navy further responsibility for manhours consumed in flight testing and maintenance. Leroy Grumman and Jake Swirbul (president and vice president), noting that US aircraft production lines would soon be swelled with foreign if not domestic orders, could not long dawdle over modification of a single aircraft. Thus, on 7 January 1941, Grumman proposed Naval acceptance of the modified XF5Fin its then-present status "in order that the interests of national

At right, close-up of the extended engine nacelles installed on the long nosed XF5F-1. Note open cowl flap, spinner, and new gear doors. Below, the new lengthened engine nacelles as seen from behind, compare this photo with the one on the previous page.





Three views of the XF5F-1 in its final configuration before being repainted in Navy blue with light grey undersides. Note exhaust stains and the canopy open position seen at left.

defense may be best served."

The intent by Grumman was to avoid further expenditure of effort to bring the XF5F to the level of becoming a service type. It had become clear that any production would suffer from weight escalation, with the resultant increase in wing area, jeopardizing an airframe which was already overweight in the BuAer's eyes. Thus it was that, on 31 March 1942, the

Above, the modified XF5F-1 on an early test flight after adding the long nose and lengthened engine nacelles. Note the tufting on the fuselage, wings and tail.

company advised BuAer that , since the XF5F was overweight and experiencing technical problems, "Grumman has no further interest in devoting time and effort to this program and considers the contract terminated." However, it wasn't until 4 September 1942 that the Navy terminated the contract. The aircraft was officially transferred to the experimental and development squadron at NAS Anacostia.

Dick Hutton, primary design engineer of the aircraft, stated in a 1980s interview that its complicated construction failed to allow for the introduction of more recent technical innovation and contributed to the failure to achieve production. He said, "at about the time the F5F was being thought of, large aluminum extrusion was becoming possible, and to take advantage of this development, the wing box beam structure was conceived using the largest extrusion at the time with integral stiffening .... this box structure was the integral fuel tank, an item which restricted the application of selfsealing tanks in the aircraft, one of the items considered undesirable and leading to no production of the F5F. The structure was also good from a gunfire damage standpoint."

Grumman had devoted studies to this problem of the provision of a self-sealing tank. In mid-1940, a sample metal fuel tank was sent to the Goodrich Tire and Rubber Co for the fabrication of a rubber liner. Following assembly of the tank it was to be subjected to gunfire tests, but it is not known whether this took place.

Below, the long nose version of the XF5F-1 on 4-27-43 after being repainted in the standard Navy scheme of flat sea blue on the upper surfaces and matt white on the undersurfaces. The spinners also have been removed and the props have been painted black.

In January 1941, BuAer changed the test schedule for the XF5F-1, eliminating inverted spins, reducing normal spins from ten turns to two, and limiting diving speed, etc.,to avoid the added time and expense required to modify the aircraft, which now greatly exceeded original weight estimates. Earlier, Vought's XF4U-1 and Bell's XFL-1 also had been spared the more exacting dive tests previously required.

These preliminary factory flight demonstrations of the XF5F were completed on 24 February 1941. On the following day the aircraft was ferried to NAS Anacostia for the final Navy demonstration. Connie Converse flew the aircraft through its final Navy tests on six separate occasions, concluding with Navy-required spin, dive and maneuver demonstrations which included a deadstick landing. Factory test reports noted that "all portions of the Preliminary Demonstrations were completed except the snap rolls."

Throughout the testing of the XF5F-1, BuAer had been forced to accept the great increase in weight of the modern combat aircraft. To underline their surprise, an internal BuAer document written in mid-1937 states, "from the practical viewpoint ... the great size of the (competing) airplanes together with their great weights will present operating problems that will be difficult to handle by the present squadron complements. The present weights of VF (Navy fighters) are as follows: F3F-1, 4,100 pounds; F3F-2, 4,400 pounds; XF2A-1, 4,800 pounds; XF4F-2, 5,100 pounds. To go from these airplanes to one weighing 9,000 pounds (Vought B design, to evolve into the F4U Corsair) is a step not to be taken without serious thought. The main objection to the twin-engine design in the past has been that, although it promised high speed, it is too large. This (design) competition discloses that single-engine planes of equivalent speed are even larger."

Weight problems continued to dog the aircraft. NAS Anacostia reported to BuAer on 17 February 1942 that the final demonstration had been completed. The CO E. P. Moore reported, "the airplane is 817 pounds overweight. The weight empty at Anacostia was found to be 8,107 pounds including residual fuel and oil in the fuel and lubricating systems. The gross weight as flown during the trials as a fighter was 10,132 pounds. Comparison is made below between the measured performance of the model XF5F-1 and the contract guarantees."

The final demonstration at Anacostia revealed the need for modification of the aircraft in a number of respects, including longitudinal stability in high power climb and landing condition, inadequate cockpit ventilation, inadequate brakes, high rudder forces, engine modifications, inadequate armament access, etc.

The first accident suffered by the prototype occurred on 3 February 1942 when a fitting in the arresting gear failed during an arrested landing at the Naval Aircraft Factory at Philadelphia, Pennsylvania. The aircraft ground-looped and sustained damage from a deck pendant. However, primary damage occurred to the starboard wing near the tip, the starboard aileron, fin and rudder, and the arrester hook and fuselage fairing. The estimated cost of repair, which required about four week's work on a three-shift basis, was $5,000, which was authorized.

A similar accident occurred on 18 May. Following repairs the XF5F was flown for familiarization trials at both Anacostia and Patuxent. It was also used as a station hack, becoming one of the longest-lived prototypes in the military stable. On 13 June 1944, its undercarriage collapsed while it was parked at Anacostia, but the minimal damage was repaired.

Finally, on 11 December 1944, while the aircraft was making an approach at NAS Floyd Bennett Field, its undercarriage would not extend. Such was the damage sustained in the ensuing belly landing that the Navy concluded that the aircraft was beyond economical repair. The Grumman XF5F was struck off the active list on the following day, after 211 flights and 155.7 flying hours. However, even though it was no longer airworthy, the Skyrocket died hard. In February 1945, the stripped airframe continued to be used by crash crews to simulate forced-landing rescue techniques.

Although the initial unique fuselage configuration of the Skyrocket was not found to be practical, its serviceability and dependability led to a long life of almost five years. This illustrated well the basic integrity of Grumman's design, leading directly to a firm production contract for a later development, the F7F Tigercat.

This certainly fulfilled Leroy Grumman's desire to maintain the lead in aeronautical technology. For, as we have seen, although the XF5F-1 bore the burden of numerous unusual features, many of these underwent development in the XP-50 and XP-65 designs, maturing in the Tigercat series.

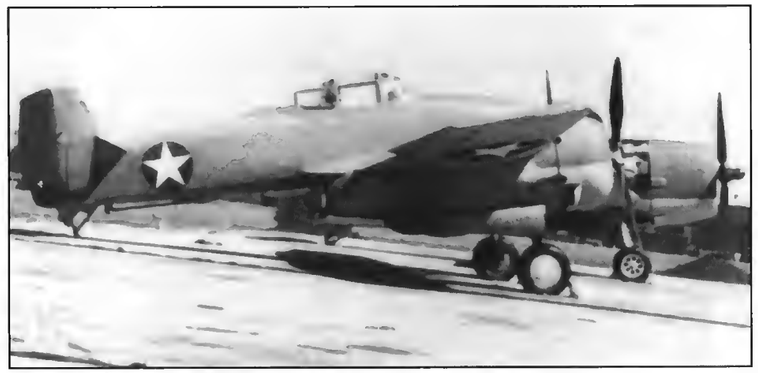
	GUARANTEED	ACTUAL
Max speed at critical altitude	not less than 350mph	358mph at 17,300ft
Min speed with power at sea level	not more than 73.5mph	73mph
Service ceiling with normal load	not less than 32,000ft	34,500ft
Take-off distance in a 25kt wind	not more than 210ft	191ft

GRUMMAN DESIGN AND PROJECT NUMBERS

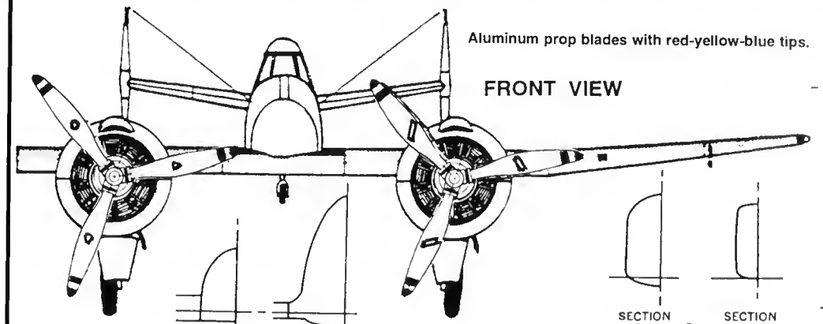
G-34	Fighter project, short nose, short engine nacelles, twin Wright Cyclone engines, twin tail; becoming the XF5F-1.
G-35	Fighter design project, later cancelled.
G-36	XF4F and modifications.
G-37	F3F-2 export version.
G-38	XJ3F-1 Goose amphibian.
G-39	JRF-2 Goose with equipment change.
G-40	XTBF-1 Avenger torpedo bomber.
G-41	Fighter design project SP183. Twin P&W Twin Wasp R-1830 engines. Four machine guns, one 37mm cannon. Longer nose than the XF5F-1. Might have been assigned to final configuration of XF5F-1.
G-42	Monoplane modification of J2F Duck. Two built by Columbia Aircraft as XJL-1.
G-43	XF4F-2 modified for US Army.
G-44	XJ4F-1 Widgeon amphibian.
G-45	Series of proposals to USAAC in response to tendered fighter design Spec USAAC XC621 and US Army Spec R-1800-D dated 1 December 1938. Aircraft was intended to have conventional undercarriage and two Twin Wasp engines.
G-45A	Proposed modification to USAAC Spec and export version. Featured tricycle undercarriage and two liquid-cooled Wright XR-1820 Tornado engines of 2,350hp.
G-45B	Proposed modification to USAAC Spec, featuring gull wing, twin-boom tail and two liquid-cooled Wright Tornado engines.
G-45C	Fighter proposal. Twin-boom tail, single liquid-cooled Wright Tornado engine mounted in pusher configuration.
G-46	Fighter with long nose, lengthened engine nacelles, tricycle undercarriage and two Wright Cyclone engines. Became USAAC XP-50.
G-47	Proposed modification of JRF Goose (Model G-21).
G-48	Same as Model G-47, but weight increased to 12,000 pounds.
G-49	Fighter design project SP385. Twin GR-2600 engines. Two machine guns, two 20mm cannon.
G-50	XF6F Hellcat.
G-51	Fighter design proposal for XP-50 replacement to USAAC contract. Twin Wright Cyclone engines to become XP-65. Although this project was cancelled, the project number continued to be assigned to the F7F project.

Below, the long-nosed Skyrocket on 4-27-43. Purpose of the antennae-like structure on the nose is unknown.

At right, the XF5F-1 on the ramp at Bethpage. Below, the XF5F-1 being hoisted up for repairs after a gear-up landing on 11 December 1944. The Skyrocket was not flown again. Below right, the XF5F-1 at NAS Floyd Bennett Field at the end of its career. Note the national insignia has been changed to the star-and-bar. (H. G. Martin)

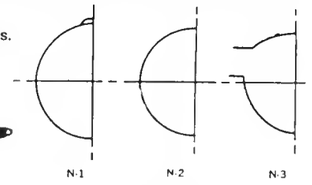


SHORT NOSED GRUMMAN XF5F-1 NAVAL FIGHTER IN 1/72 SCALE

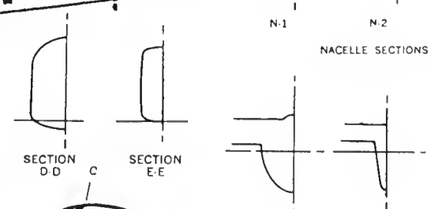


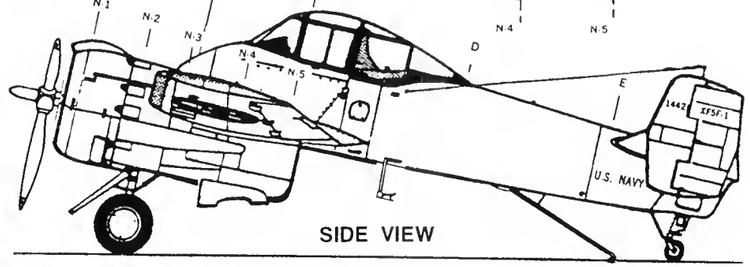
Aluminum prop blades with red-yellow-blue tips.

FRONT VIEW



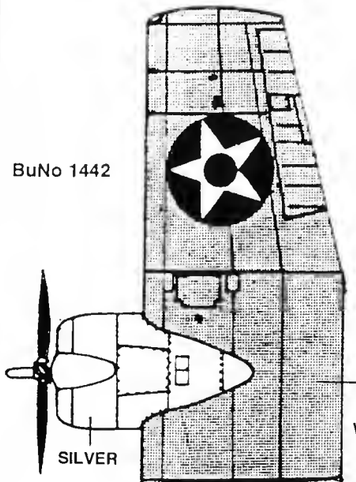
NACELLE SECTIONS



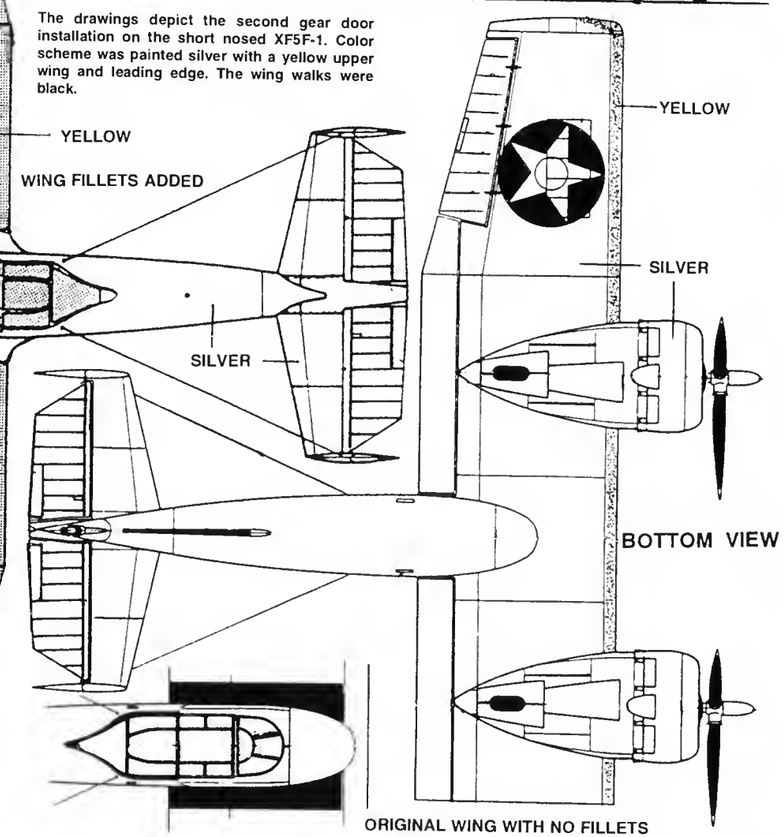


SIDE VIEW

BuNo 1442



The drawings depict the second gear door installation on the short nosed XF5F-1. Color scheme was painted silver with a yellow upper wing and leading edge. The wing walks were black.

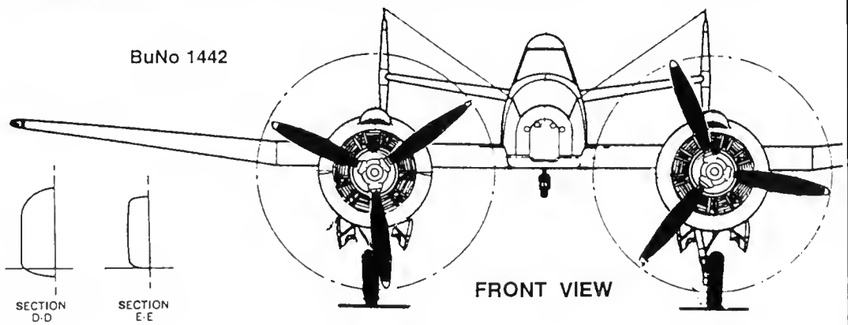


TOP VIEW

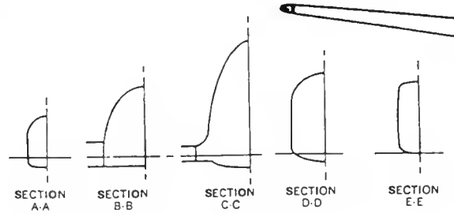
BOTTOM VIEW

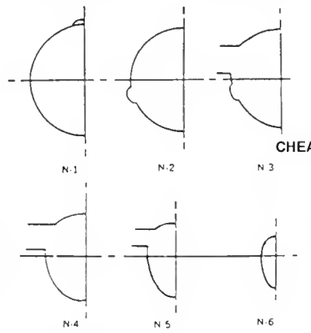
LONG NOSED GRUMMAN XF5F-1 NAVAL FIGHTER IN 1/72 SCALE

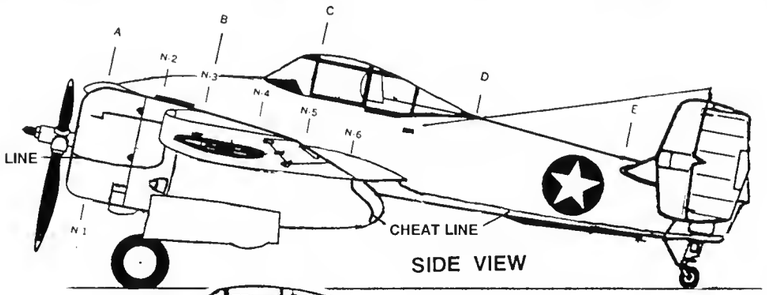
BuNo 1442



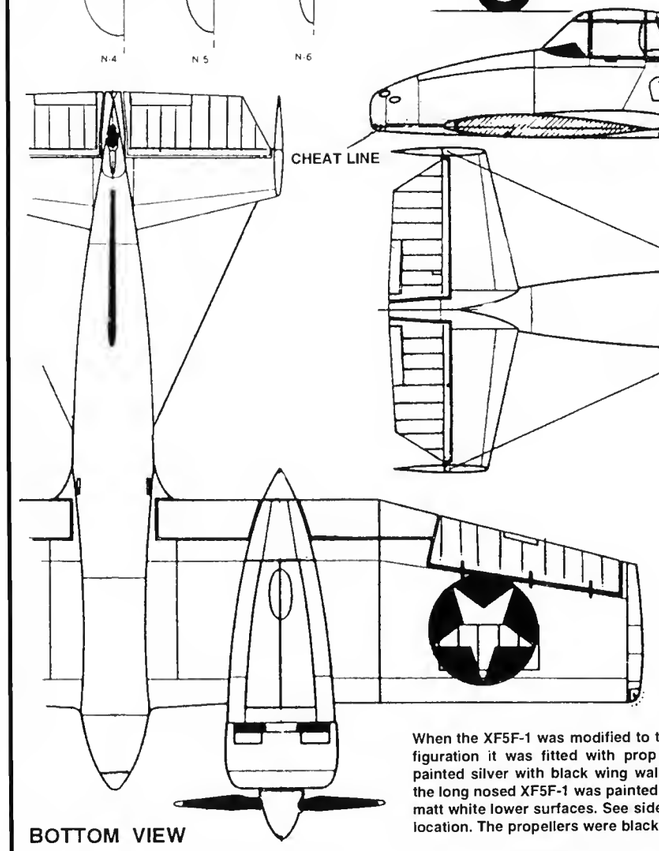
FRONT VIEW



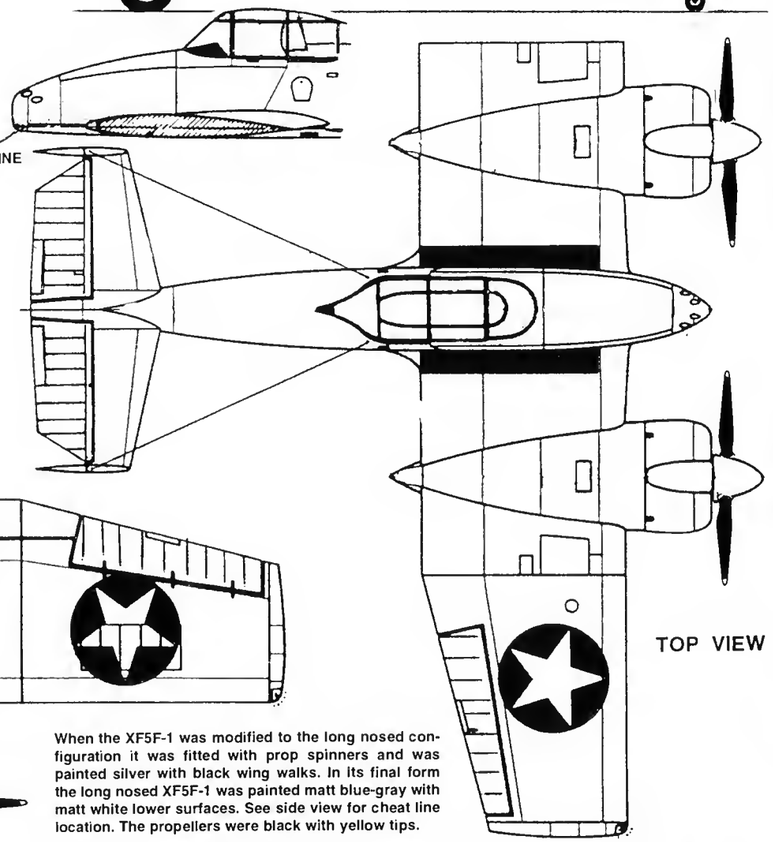




SIDE VIEW



BOTTOM VIEW



TOP VIEW

When the XF5F-1 was modified to the long nosed configuration it was fitted with prop spinners and was painted silver with black wing walks. In its final form the long nosed XF5F-1 was painted matt blue-gray with matt white lower surfaces. See side view for cheat line location. The propellers were black with yellow tips.

THE GRUMMAN XP-50 SKYROCKET

Having been developed prior to the gathering of warclouds, the Skyrocket concept was fated to spawn several lookalikes as the US armed services grappled with the challenge of an enemy flying with its own effective aviation might.

As XF5F testing progressed, Grumman could see that BuAer became less interested in the Skyrocket concept. With its unique configuration, Grumman attempted to present a modified aircraft to the USAAC in response to Circular Proposal 39-775 of March 1939, intended to provide the Air Corps with a high altitude interceptor demanding the use of turbo-superchargers. Furthermore, the Air Corps was seeking the modification of an already existing design so as to limit needed development time. The Lockheed P-38, modified with high-altitude features including suitably-rated

At right, the wood and metal XP-50 mockup complete with engine and engine mounts. Note that the wings and tail were not included as they were virtually identical to the Navy's XF5F-1 Skyrocket.

engines, was chosen as the winner in the limited competition and became the XP-49. The backup aircraft was Grumman's model G-45, which became the XP-50.

Utilizing the same basic wing and tail as the XF5F, the XP-50's fuselage was lengthened over two feet to accommodate different armament and tricycle landing gear. A major change took place in the engine, with the aircraft now being powered by turbo-supercharged Wright R-1820-67/79 engines. The latter were likely to offer a bit less development time than either of Lockheed's power choices. The engines proposed for the XP-49 were either the highly experimental twenty-four cylinder Pratt & Whitney X-1800s, or the

Below, the XP-50 outside the Grumman factory in the spring of 1941, prior to its first flight on 18 February. Note the F7F style nose gear.

Continental XI-1430-1s.

Thus, in the initial running, Grumman's proposal seemed to offer a dependable alternative to Lockheed's more risky venture. On 25 November 1939, Grumman received a contract from the Air Corps for the construction of the XP-50. The prototype aircraft first flew on 18 February 1941. The aircraft demonstrated improved handling over the XF5F and, as credit to its new turbo-powered engines, increased climb rate at medium and high altitudes.

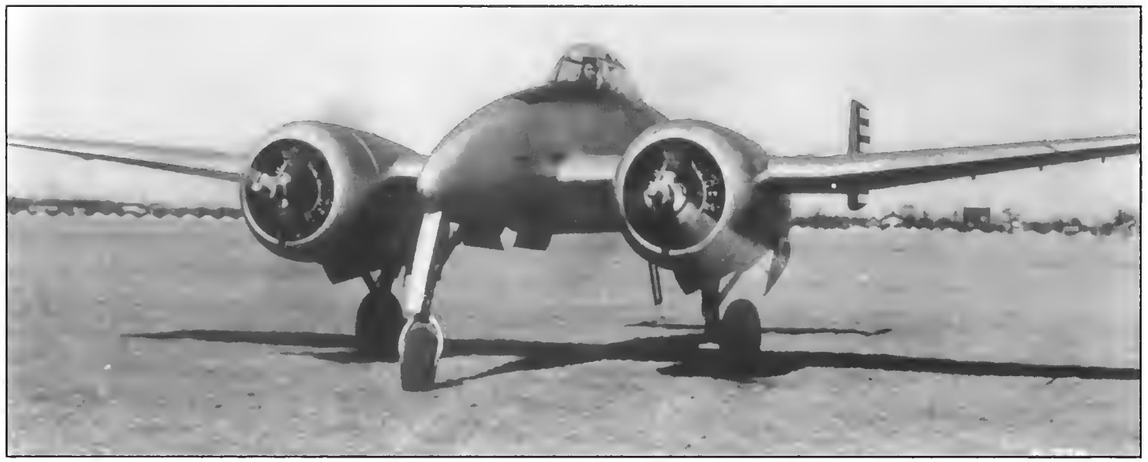
Above, the XP-50 taxis out for a test flight. The rudders are red and white with a blue vertical stripe painted in front of them. Note how the main landing gear are knuckled aft of the struts to improve the ground CG.

At right, the XP-50's right main gear collapsed on an icy runway in March 1941, but was repaired and was flying again by May. Note the similarity between the XP-50 fuselage and the F7F fuselage.

Unfortunately for Grumman, by this date the USAAC was offered a wider selection of aircraft from other manufacturers to meet its needs. They also received extensive input from allied nations sharpening their respective aeronautical skills upon their opponents. So, when the XP-50 crashed on 14 May 1941 as a result of an in-flight turbo explosion, Air Corps interest in the design had declined and the project was cancelled.

Robert Hall, the XP-50's test pilot,

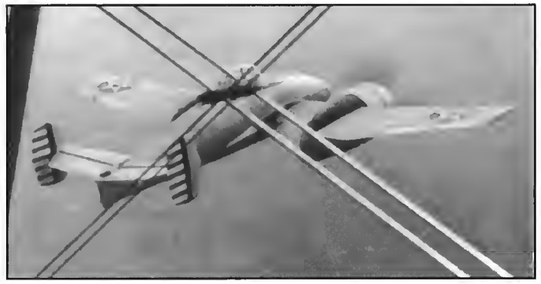
Below, the XP-50 taxis on the grass at Bethpage in the spring of 1941.



had to bail out, leaving the XP-50 to plunge to its death into Smithtown Bay off Long Island Sound after the right engine's turbo-compressor exploded, damaging the hydraulic system. The damage prevented the lowering of the nose wheel or retraction of the main gear, which necessitated the bailout and subsequent loss after just twenty hours of flight testing.

The 427mph fighter had a proposed armament consisting of two 20mm cannon and two 50 cal machine guns in the nose, and provisions for two 100 pound bombs beneath the fuselage.

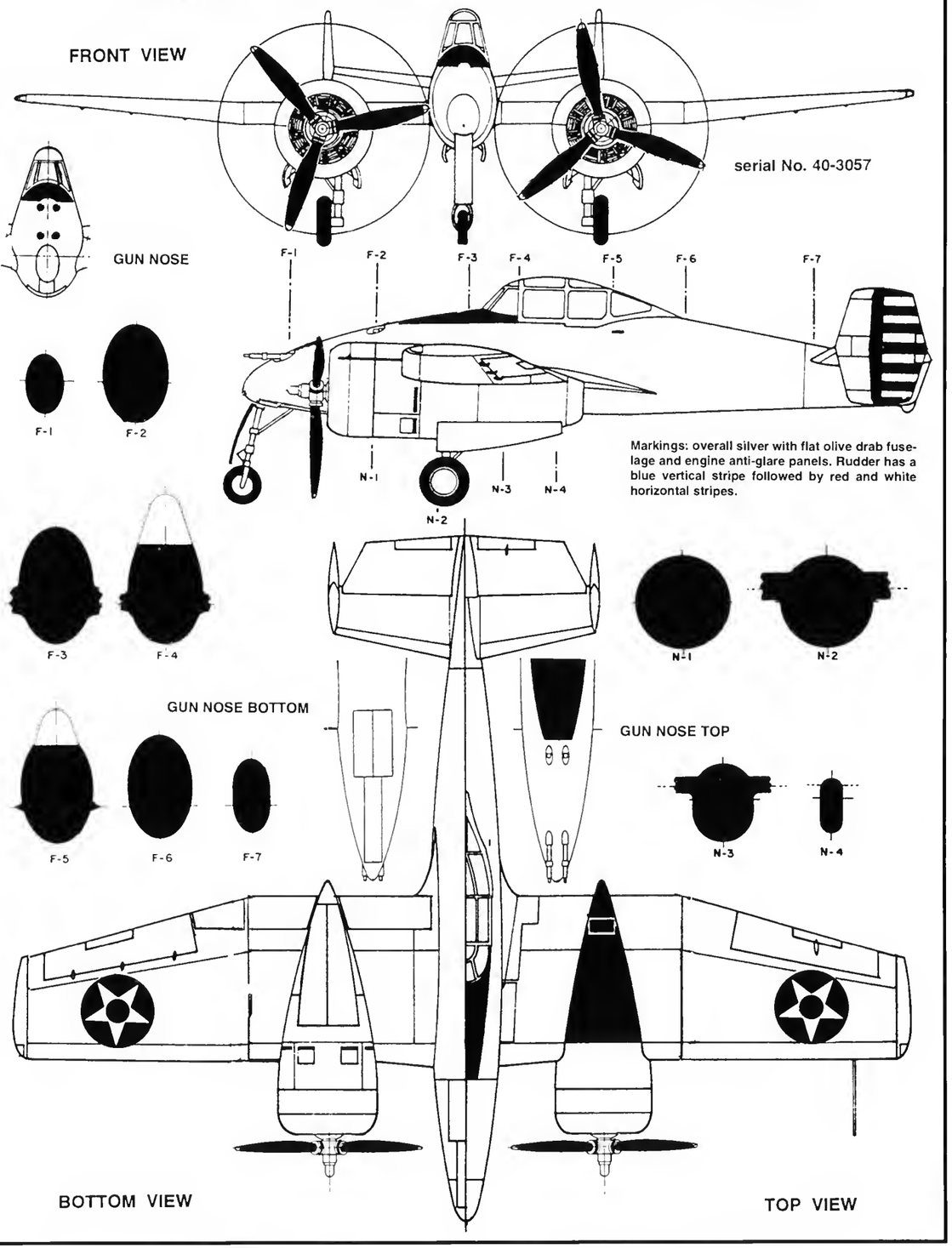
Above and below, the silver painted XP-50 as seen from above with black anti-glare panel, wing walks, and upper engine nacelles aft of the wing's leading edge. The canopy was the same as used in the last version of the XF5F-1.



XP-50 PHOTO GALLERY

The XP-50 had cost the USAAC $353,828, and the lessons learned during its construction and testing added to those learned on the XF5F-1 and were instrumental in the success of the F7F Tigercat.

GRUMMAN XP-50 USAAC FIGHTER IN 1/72 SCALE



Markings: overall silver with flat olive drab fuselage and engine anti-glare panels. Rudder has a blue vertical stripe followed by red and white horizontal stripes.

USAAC XP-65 AND USN XF7F-1 TIGERCAT

After the demise of the XP-50, Grumman attempted to interest the Air Corps in a new design, the XP-65. The design was designated by Grumman as Model G-46 and was to be powered by two 1,700hp Wright R-2800-22W radial engines and armed with four 20mm cannons an four 50cal machine guns. This design evolved into the similarly powered Model G-49, which later became Model G-51 to incorporate the XF7F Tigercat proposal.

The USAAC ordered two XP-65 prototypes on 16 June 1941. However, by 16 January 1942, the Air Corps had concluded that their requirements called for an aircraft designed more specifically for their needs than the XP-65 permitted, and the contract was cancelled. Grumman's Model G-51 evolved into the Tigercat, which was not flown until November 1943 due to self-imposed and Navy delays from Grumman's other commitments.

Another factor in the Air Corps cancellation of the XP-65 was an Army-Navy agreement that Grumman, with its clearly-displayed naval aircraft manufacturing skills, should act primarily as the builder of navy aircraft rather than diffuse its skills by accepting contracts from other services.

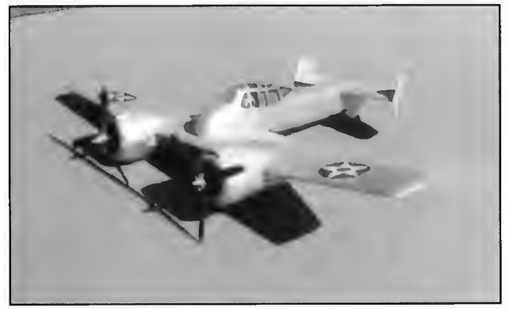
Thus ended Grumman's brief flirtation with the Air Corps. It wasn't until the mid-fifties that Grumman would design and build an aircraft for the Army, this being the OV-1 Mohawk surveillance aircraft. Nevertheless, the company's exposure to other than Navy requirements must have served to broaden its engineering abilities to a point where it has led to Grumman's esteem as a developer of aircraft for the entire spectrum of aviation and space needs.

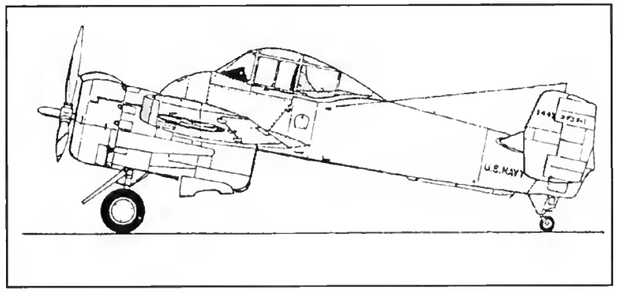
Below, the XF7F-1 on 11-12-43. In this form, the XF7F-1 was virtually identical to the proposed USAAC XP-65. Even though the XP-65 had been cancelled, the Air Corps tested the XF7F-1 at Wright Field. The XF7F-1 is overall natural metal with TEST in yellow bordered by black on the nose. Bottom, one of the final products that led from the XF5F-1, the F7F-3N.

RAREPLANES VACUFORM 1/72 SCALE XF5F-1 SKYROCKET

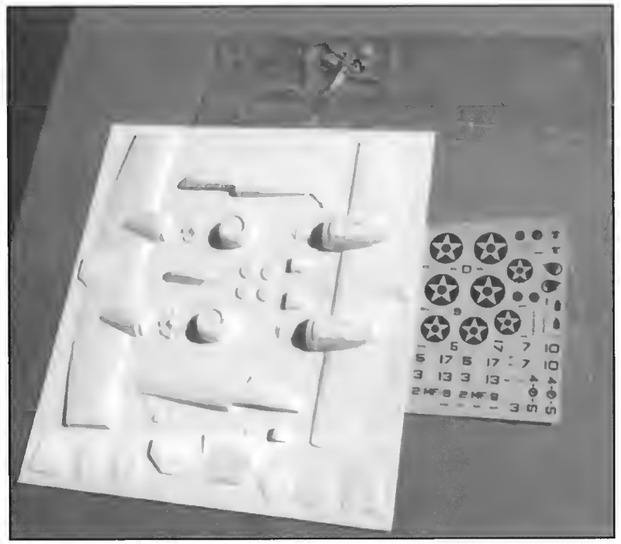
RAREPLANE

This kit contains highly detailed vacuum formed styrene mouldings, clear transparencies, multi-view scale plans, picture and article references, colour and marking details, decals, white metal wheels, propellers and undercarriage.





Above right, the 1970s RarePlane XF5F-1 kit. At the time I built this kit, I didn't even have enough information to know that the upper wing was yellow. Below, the parts for the 1980s new RarePlane XF5F-1 kit, I find to be a better offering than the injection molded MPM kit.



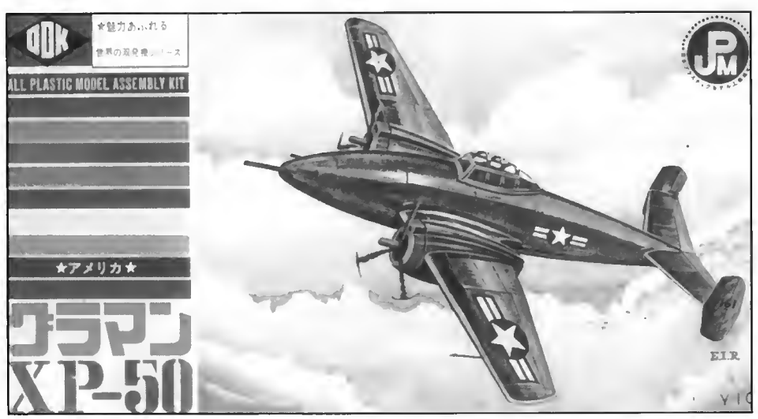
By Steve Ginter

In the early 1970s, RarePlanes offered a crude (by their current standards) 1/72 XF5F-1 kit. It was one of their first kits and is illustrated above. The kit was re-issued in the late 1980s as a boxed kit with all-new moulding, a decal sheet, and white metal parts. These included propellers, wheels and gear struts. Also included were two canopies. All the parts were finely detailed and very accurate. The kit moulding provided the parts for the XF5F-1 as it was configured prior to conversion to the long nose version. In this version, the wing-to-fuselage fillets and offset rudders are seen. If I were to build a difinitive XF5F-1 kit, I would use this kit as a basis and add to it photoetched pieces from the MPM kit.

JPM MODELS XP-50 SKYROCKET

By Steve Ginter

The kit at right was available in the early 1970s. It was molded in dark green and black plastic in about 1/60th scale. The kit is just a caricature of what the XP-50 looked like and is unsuitable for even a starting point for a XP-50 model. The kit contained 48 parts and a decal sheet.



MPM INJECTION MOLDED 1/72 SCALE XF5F-1 SKYROCKET

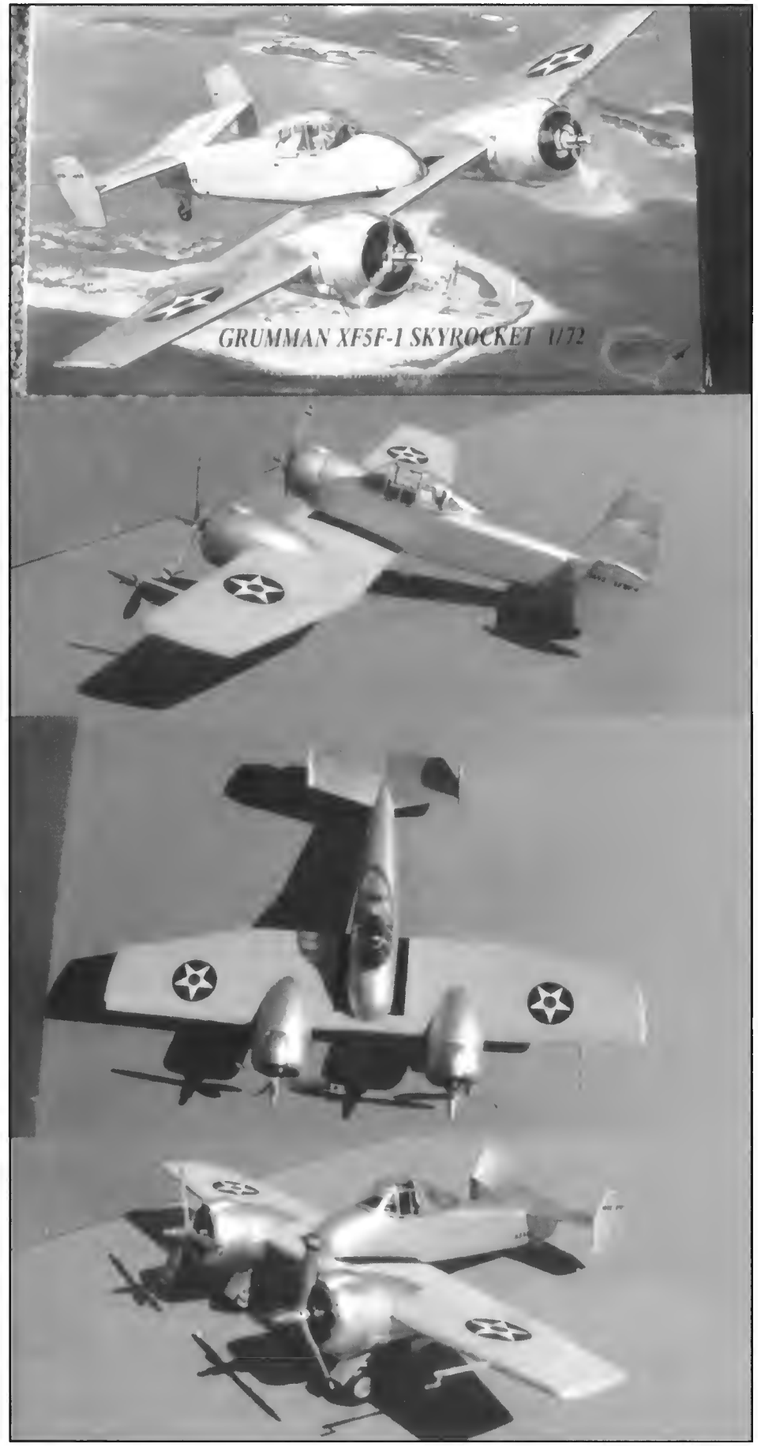
MPM

BY STEVE GINTER

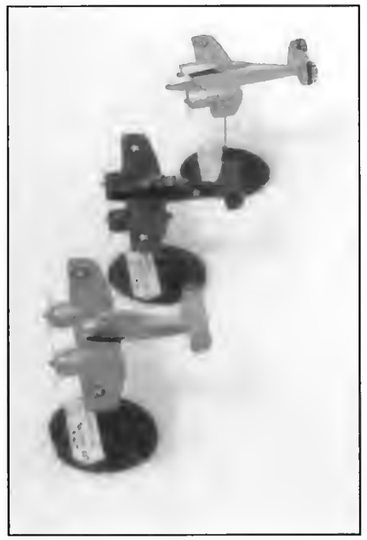
As a model builder and afficionado of Naval aircraft, I greatly appreciate the efforts of MPM in continuing to produce rare and unusual Naval aircraft. Their Skyrocket offering, kit #72022, is a welcome offering for modelers who have not mastered the vacuform scene. The kit comes with a beautiful color inflight boxtop illustration. The model represents the early XF5F-1, which had exterior engine nacelle exhausts, a straight rudder hinge line and no wing-to-fuselage filet. The model is proportioned well and has accurate decals included. To enhance the kit, MPM added photoetched detail pieces.

Construction of this model is straightforward, but I found it difficult to build and position the main landing gear and forward gear door. My suggestion would be to acquire a RarePlane XF5F-1 kit and utilize the white metal main gear and wheels and the vacuform gear doors, which are accurately reproduced in the RarePlane kit. Although MPM has included photoetched parts to enhance the model, the plastic pieces lack sufficient panel lines to make it a better choice than the RarePlane kit. The photos at right of the built-up model were taken before antennae wires were added from the fuselage sides to the antennae posts on the top of the vertical tails.

Other MPM naval aircraft kits are the McDonnell FH-1 Phantom, Grumman FM-2 Wildcat (kit #72049), Ryan FR-1 Fireball (kit #72040), and later this year the Ryan XF2R-1 Darkshark.



HBM MODELS 1/200 SCALE XF5F-1 AND VK MODELS 1/200 SCALE XP-50

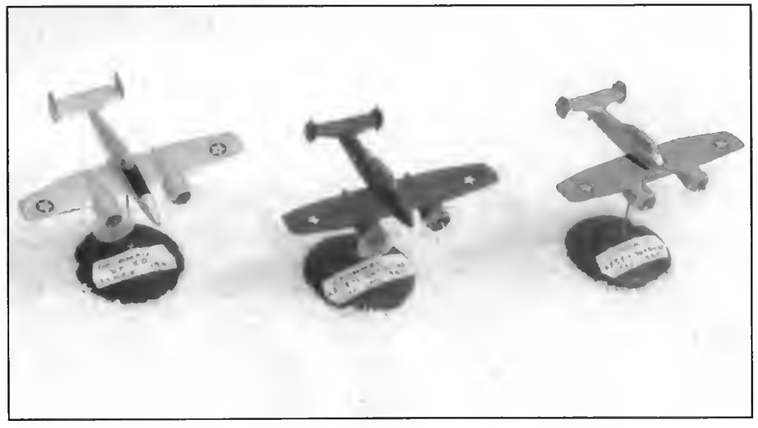


Models and photos by Thomas Healy

Resin XF5F-1 and XP-50 models in 1/200 scale, by Tom Healy

In the little known, but thriving world of 1/200 scale aircraft models, about 1,000 types have been produced. Among these are an XF5F-1, HBM Models #202, and an XP-50, VK Models #110 (of the Czech Republic). Both are currently available from Professor Ron Crawford, P. O. Box 23, N. Ferrisburgh, VT., 05743. You must be patient when ordering as they are produced by hand, often custom cast to your order.

Both kits are supplied as single piece solid epoxy resin castings, with a 2.5 inch (42 scale ft.) wing span. Props (or discs like I used), and other detail touches are either from the spares box or scratch built. I, like many 1/200 scale collectors, display my models in a flight attitude, so there is no landing gear involved on models with retractable wheels. For insignia, I used 1/200 "Dinky" scale insignia from Maybex Products in England.



The VK #110 XP-50 is out of the "bag'. It appears to scale-out in all key dimensions. The casting had very good surface finish and needed almost no sanding or filling of casting imperfections. Spray or brush-on your favorite modeling enamel or acrylic for the basic color, and use a fine brush for small details. Decal as you would a larger model. The XP-50 in the photos represents the USAAC prototype at its rolout at Bethpage, N. Y., in 1941.

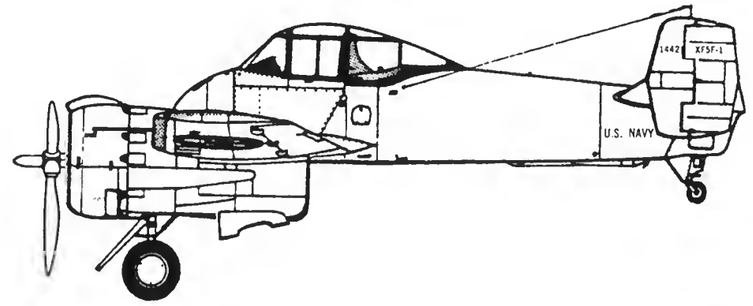
The HBM #202 XF5F-1 is similar, but not quite as accurate in scale. The vertical fins should be essentially the same size as on the XP-50, and as cast are almost 10% undersize. The cockpit is slightly oversize, and again should be about the same size as on the XP-50. In length, the cockpit scales almost exactly what it should be if flown open. One could elect to cut the cockpit and fit a pilot's head into the cut-out area, or one could sand the cockpit down to scale. The fins could be built up with a little Green Stuff, but I decided to leave well enough alone.

The aluminum / yellow XF5F-1 was finished as molded, as described above. The model shows the Skyrocket as it appeared in the summer of 1940 when it was being tested at NAS Anacostia.

The blue / gray Skyrocket is the plane as it looked after modification as it was again tested at NAS Anacostia in the winter of 1942. To build up the nose and nacelle contours, I reduced some 3-views to 1/200 scale on a copier, and cut some very thin scrap plastic from a vacuform kit to match the desired profile. These were fitted and glued in place with super glue. The areas were built up with putty and carefully sanded and filed into shape, followed by paint and decals.

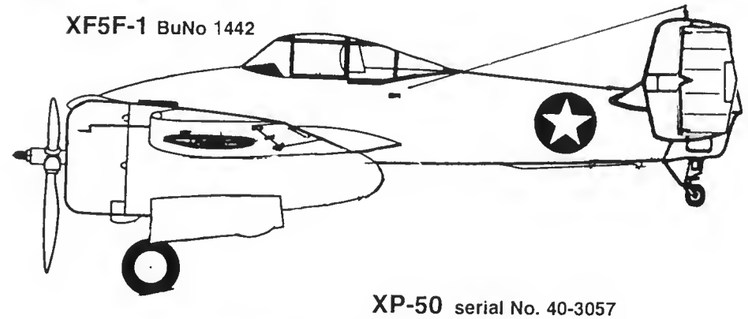
XF5F-1 BuNo 1442

SHORT NOSED

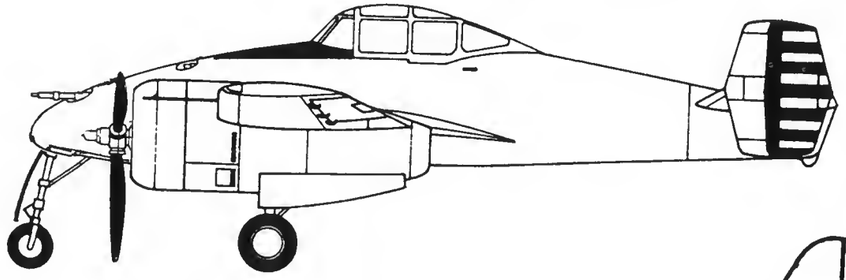


XF5F-1 BuNo 1442

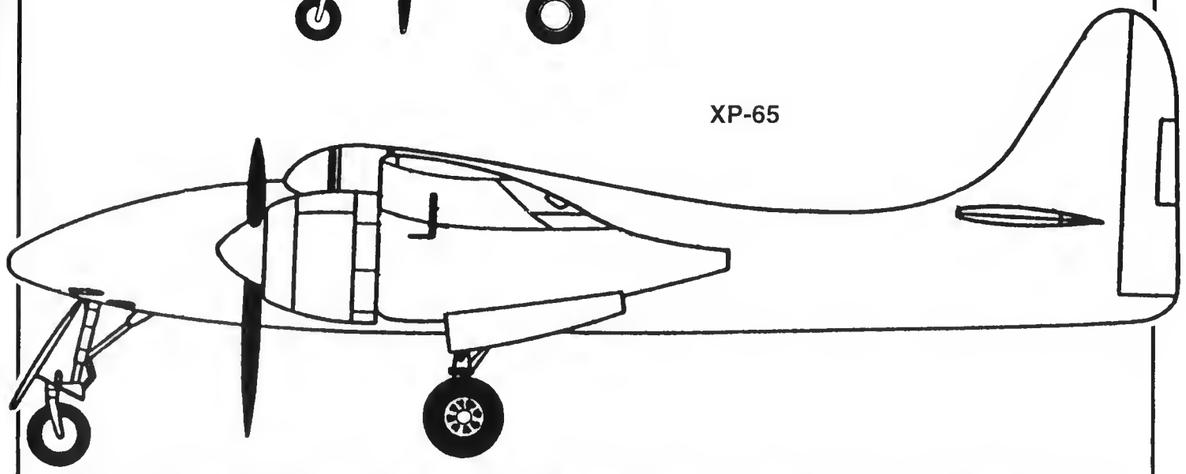
LONG NOSED



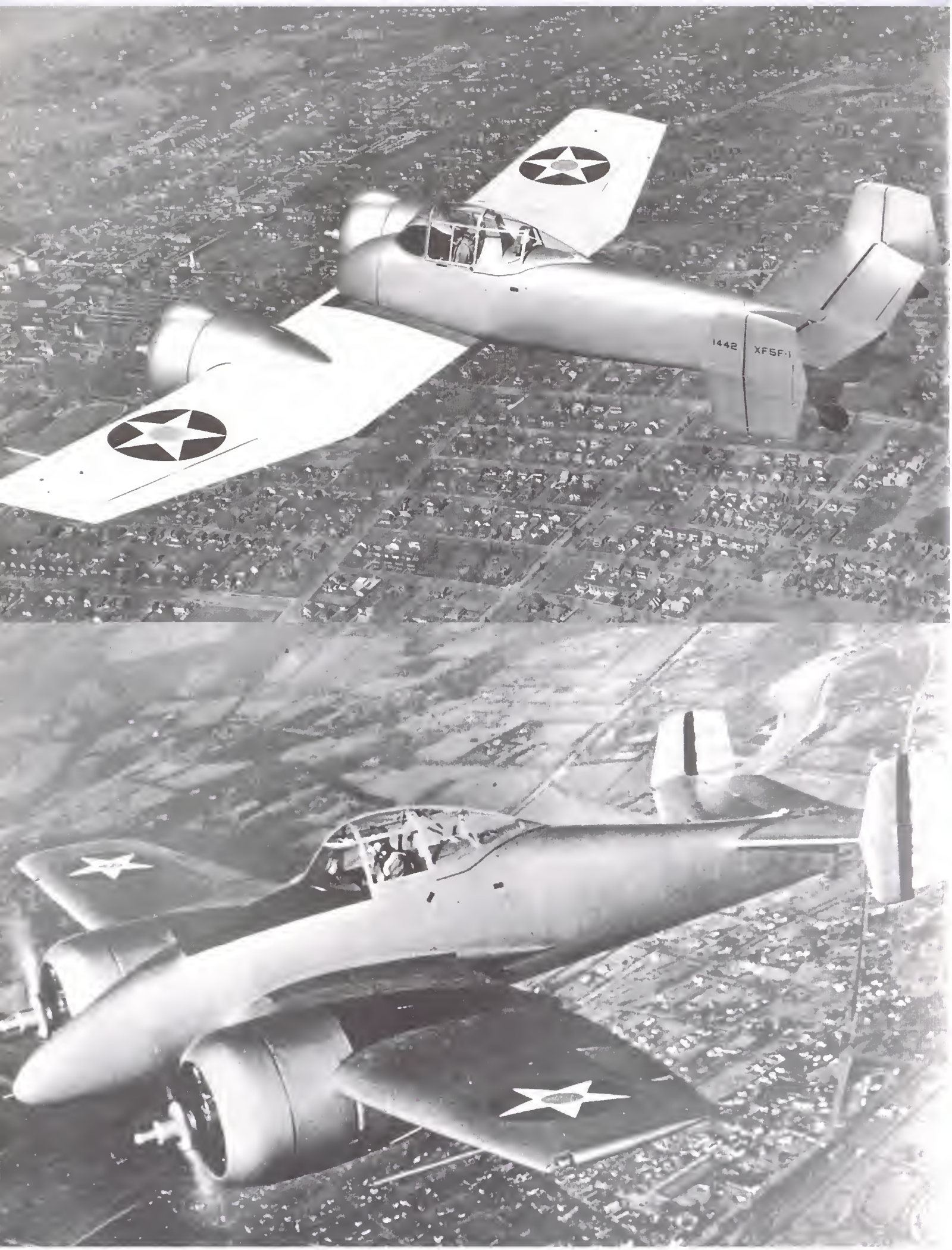
XP-50 serial No. 40-3057



XP-65



FRONT COVER, the XF5F-1 in its original form prior to the landing gear door revision. BACK COVER, the XF5F-1 on a early test flight. Bottom, USAAC XP-50.


1442
XFSF-1